

PROJECT ADMINISTRATION DATA SHEET

☒ ORIGINAL ☐ REVISION NO. \_\_\_\_\_  
 Project No. D-48-614 GTRI/GIX DATE 8 / 01 / 83  
 Project Director: Anthony J. Bradshaw School/Unit Architecture  
 Sponsor: Division of Rehabilitation Services  
Atlanta, Georgia 30334  
 Type Agreement: Contract No. 427-93-30657  
 Award Period: From 6/29/83 To 9/30/83 (Performance) \_\_\_\_\_ (Reports) \_\_\_\_\_  
 Sponsor Amount: 11/13-83 This Change 12/15/83 Total to Date \_\_\_\_\_  
 Estimated: \$ \_\_\_\_\_ \$ 16,506  
 Funded: \$ \_\_\_\_\_ \$ 16,506  
 Cost Sharing Amount: \$ \_\_\_\_\_ Cost Sharing No: \_\_\_\_\_  
 Title: "Systematic Approach for Information and Adaptive Equipment Services  
Delivery to DRS Field Counselors"

ADMINISTRATIVE DATA	OCA Contact	John W. Burdette	X4820
Sponsor Technical Contact:	2) Sponsor Admin/Contractual Matters:		
	Mr. Joe Patrick		
	Division of Rehabilitation Services		
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	10th Floor - East Tower		
	Atlanta, Georgia 30334		
	.(404) 656-2480		
Sense Priority Rating: <u>N/A</u>	Military Security Classification: <u>N/A</u>		
	(or) Company/Industrial Proprietary: <u>N/A</u>		

**RESTRICTIONS**

Attached --- Supplemental Information Sheet for Additional Requirements.

Travel: Foreign travel must have prior approval - Contact OCA in each case. Domestic travel requires sponsor approval where total will exceed greater of \$500 or 125% of approved proposal budget category.

Equipment: Title vests with None Proposed

**REMARKS:**

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**COPIES TO:**

Project Director	Procurement/EES Supply Services	GTRI
Research Administrative Network	Research Security Services	Library
Research Property Management	Reports Coordinator (OCA)	Project File
Accounting	Research Communications (2)	Other <u>I. Newton</u>

SPONSORED PROJECT TERMINATION/CLOSEOUT SHEET

Date February 6, 1984

ct No. D-48-614

School ~~XXX~~ Architecture

des Subproject No.(s) NONE

ct Director(s) Anthony J. Bradshaw

GTRI / ~~XXX~~

for Division of Rehabilitation Services

"Systematic Approach for Information and Adoptive Equipment Services Delivery  
to DRS Field Counselors"

tive Completion Date: 12/15/83 (Performance) \_\_\_\_\_ (Reports) \_\_\_\_\_

/Contract Closeout Actions Remaining:

- ☐ None
- ☒ Final Invoice or Final Fiscal Report      Final Expenditure Report
- ☐ Closing Documents
- ☒ Final Report of Inventions
- ☐ Govt. Property Inventory & Related Certificate
- ☐ Classified Material Certificate
- ☐ Other \_\_\_\_\_

ues Project No. N/A

Continued by Project No. N/A

ES TO:

ct Director  
rch Administrative Network  
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rement/EES Supply Services  
rch Security Services  
~~the Coordinator (OCA)~~  
Services

Library  
GTRI  
Research Communications (2)  
Project File  
Other \_\_\_\_\_

(402) 10/8/80

ANNEX B

CONTRACT PROGRAMATIC  
REPORT  
FOR

MYNICE September 1983  
month & year

Monthly

Quarterly

PROJECT TITLE: Systematic Approach for Informational and Adaptive Equipment

Contract #: 427-93- 30657

Services Delivery to  
DRS Field Counselors

D48-614

TO: Mr. Joe Patrick

Division of Rehabilitation Services

47 Trinity Avenue, 10th Floor, East Tower

Atlanta GA 30334

Anthony J. Bradshaw

CRT, College of Architecture, GA Tech

Atlanta GA 30332-0156

Qualitative analysis of project accomplishments to include, % of completion, problems, assistance needed and elements to assist the Department in Program Evaluation: (use continuation pages as necessary)

Narrative: a. Please see attached.

X N V O J U  
Project/Program Manager



Center for Rehabilitation Technology

College of Architecture  
Georgia Institute of Technology  
Atlanta, Georgia 30332

(404) 894-3476

October 5, 1983

**Report: Systematic Approach for Informational and Adaptive  
Equipment Services Delivery to DRS Field Counselors**

To this date, project questionnaires have been generated and delivered to the Center for Rehabilitation Technology (CRT) staff. CRT has processed and mailed questionnaires to DRS district offices for distribution to field counselors. CRT has been receiving completed questionnaires from field counselors since Sept. 10 and this phase is now complete. CRT has completed informational packages corresponding to categories of needed information listed on the questionnaires. We are now processing specific individual-problem requests. CRT will start shipping informational packages back to field counselors the week of 10/17/83.

CRT has begun preliminary analysis of questionnaires to determine common group problems. CRT will follow up questionnaires analysis with telephone interviews with field counselors and targeted clients for additional information. Specific information supplied by counselors for spinal-injury clients has been good. Information obtained from counselors with deaf and blind clients has been rather vague. CRT will pursue further information on the blind and deaf equipment needs by follow-up telephone interviews with counselors.

The project is approximately 40% complete at this point, with no problems foreseen that would hinder its completion.

TB:ma



Office of Interdisciplinary Programs  
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A Unit of the University System of Georgia



Center for Rehabilitation Technology

College of Architecture  
Georgia Institute of Technology  
Atlanta, Georgia 30332

Nov. 4, 1983

(404) 894-3476

PROJECT REPORT

D48- 614

The Center for Rehabilitation Technology (CRT) at Georgia Tech is now in the process of responding to informational requests as provided by DRS counselors' returned client questionnaires. The targeted disability groups (1000-1290, 2310-2590, 3180-3182) were originally estimated to be composed of 3300 clients. During the process of programming for the questionnaires it was determined that approximately half of the cases were of a closed status. CRT therefore has worked with an active caseload of 1650.

1650 questionnaires were mailed to 130 field counselors Statewide. Of these mailed, 1104 (67%) from 85 counselors (65%) were returned. Of those responding, 54% were from the blind categories, 41% from the hearing impaired categories, and 5% from the spinal injured categories. 76 additional cases were reported as closed and 7 cases were reported as transferred.

Preliminary findings for common DOT goals within disability groups are as follows:

<u>Blind:</u>	123	Homemaking	<u>Deaf:</u>	54	Clerical
	39	Production		21	Teacher
	33	Computer programmer		21	Factory worker
	18	Sheltered work		14	Mail clerk
	17	Machine operator		14	Janitorial
	17	Sewing machine operator		13	Welder
	15	Clerical		12	Maid
<u>Spinal Injured:</u>	6	Computer programmer			
	4	Bookkeeping			
	4	Electronic technician			
	4	Lawyer			

CRT will follow-up on these clients by phone interview with their counselors and by extensively searching for aids and devices for these occupations for their particular disability.

CRT has discovered a potential problem of underemployment with many of the DOT goals. For example, of the 123 homemaking goals for the blind, 12 have college degrees. Of the 15 clerical DOT's, 5 have college degrees. There are 2 college-educated clients within the clerical classifications for the deaf. CRT intends to follow-up by phone with these cases to determine how these DOT goals were established.

During preliminary interviews with counselors, they have



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indicated that no kind of equipment would help employ their clients when no jobs existed. (This is particularly true with rural Georgia counselors.) They indicated that potential employers needed additional services so the employer could be more easily convinced to hire a handicapped person. With this in mind, Anthony J. Bradshaw of CRT has discussed with Wyman Poole, the DRS placement specialists supervisor, the possibilities of offering to adapt a job or workstation for any job an employer can offer and then fill that position from a pool of qualified candidates. In this concept, CRT would offer their services, through counselors and placements specialists, to potential employers, rather to or in addition to, clients yet to be placed with only a DOT goal that determines what kind of equipment they need. CRT is continuing to refine this program concept.

Within the week, CRT will start mailing information back to the counselors. All 130 counselors will receive a 50-page booklet of information, assembled by CRT, that contains general information on aids and devices and manufacturers for the three targeted groups. Counselors that check a category of information needed on the questionnaire will receive more specific information based on disability and DOT goal. Counselors that checked a category and that supplied special circumstances information will receive the most specific information. CRT has contracted for occupational therapists from Emory University to respond to these specialized requests.

CRT has requested and received permission to extend the project end date to December 1, 1983, due to initial problems with generating the questionnaires and because of the resignation of Deborah Hayes-Sanford. Unfinished work by Ms. Hayes-Sanford will be completed by the consultant occupational therapists.

On completion of the project, CRT will submit a final report of our findings with recommendations for action and at least three Research and Development proposals for adaptive equipment needs.

## FINAL REPORT

### SYSTEMATIC APPROACH FOR INFORMATIONAL AND ADAPTIVE EQUIPMENT SERVICES DELIVERY TO DRS FIELD COUNSELORS

#### Introduction

The effectiveness of rehabilitation services to the citizens of Georgia can be greatly enhanced by providing proper adaptive equipment to DRS clients to improve work performance and increase independence. The Center for Rehabilitation Technology (CRT) has provided a service to DRS on a pilot basis to identify or develop appropriate adaptive aids in response to individual vocational counselors' requests. While this service was (and is) effective in meeting individual needs, it was limited in that it did not address those needs that were shared by a number of clients. It was therefore proposed that a study be conducted to enable CRT to consolidate its services and identify and respond to problems of DRS clients throughout the State.

In conducting the study, a computer and manual search was made of existing equipment for needs given arrays of client problems in three disability groups: the blind; deaf; and the spinal injured. From this research, a document containing information on available adaptive aids relevant to each category of disability was provided to each DRS field counselor, and proposals for the design and development of two innovative new products and creation of three technical assistance programs were developed. This report is the final report on the project and is presented in the following sections:

- I - Project Objectives and Tasks
- II - Findings
- III - Product Development Proposals
- IV - Program Development Proposals
- V - Action Plan
- VI - Appendixes



## I - Project Objectives and Tasks

Increasing client caseloads require DRS field counselors to manage their time more and more effectively. The CRT information system (TechKnowledge) provides technical information on aids and devices relating to a variety of disabilities in a quick and effective manner. The majority of requests for information and technical assistance can be responded to immediately from current data on an individual call-in basis.

When no data for a particular problem can be readily found, CRT conducts feasibility studies to determine what information is needed and whether aids or devices can be designed and fabricated to answer the need. As a rule, design and fabrication of new equipment on an individual client basis is an extremely expensive procedure. Therefore, in order to respond more efficiently to the greatest number of clients at the least cost, CRT proposed to consolidate its services. The consolidation was based on the identification of common problems by searching for existing equipment for given arrays of client problems. Note was taken of both existing solutions and of problems where no solution exists. Currently, there is no mechanism available to DRS to identify and respond to common disability needs within its caseload.

To initiate its State-wide services, CRT targeted three disability groups for evaluation. These groups are the blind (DRS disability codes 1000-1290), the deaf (DRS disability codes 2310-2590), and spinal injured (DRS disability codes 3180-3182).

The project task sequence was as follows:

- 1) From DRS records, the following information for each client in the three target groups was retrieved: client's name; counselor; caseload number; age; educational level; disability code; and time on caseload.

2) CRT developed survey forms for each disability group covering information from Step 1, and questions for counselors' response concerning problems and needs for each of their target group clients. These forms were generated directly by DRS computers.

3) CRT staff distributed forms to field counselors for completion. DRS counselors forwarded completed forms to CRT.

4) CRT sorted forms by disability, Directory of Occupational Titles (D.O.T.) goal, and information need.

5) CRT conducted an information search for each specific client and/or counselor need. When relevant information was found, CRT included the data in its resource manual(s), then mailed it directly to the field counselors.

6) When no appropriate adaptive equipment was found for a client's needs, CRT recorded client data and circumstances.

7) CRT then analyzed partially solved problems and problems where no information was found. From this analysis, CRT determined common group problems. CRT then contacted DRS placement specialists and counselors to determine employment opportunities and employer needs relative to the three target groups.

8) Based on the number of clients potentially served, DOT goals and placement data, CRT identified group problems and conducted feasibility studies. Based on the findings of these feasibility studies, CRT developed product proposals for the design and development of

adaptive equipment for the blind and spinal cord injured groups.

The expected result of this project would provide field counselors with quality information that would aid them in budgeting, planning, and placing their clients in response to a short questionnaire. This project establishes a cost-effective system to identify and solve common VR problems throughout the State. The project provides direct technical assistance to VR counselors while reducing the redundancy of repetitive projects and increasing the capabilities of both the CRT and the Division of Rehabilitation Services. If the results from the project prove successful and are deemed beneficial to DRS, CRT will provide effective State-wide services through technical assistance projects and DRS program funding.

## II - Findings

The CRT mailed 1,658 client questionnaires to 129 DRS field counselors State-wide. The distribution by district was as follows:

District	Number of Clients	Number of Counselors
1	267	17
2	395	20
3	138	15
4	141	19
5	245	17
6	175	17
7	131	15
8	166	13
	<hr/> 1658	<hr/> 129

Of the 1,658 questionnaires mailed, 1104 (67 percent) were returned by 85 (66 percent) DRS counselors. The response by disability categories was: blind, 597 (54 percent); deaf, 450 (41 percent); spinal cord injured, 57 (5 percent). 76 cases were reported as closed.

Response to the question "Do you feel information on adaptive aids and devices would assist you in the potential placement of this client?" was 382 (35 percent) clients "yes" and 722 (65 percent) clients "no." The response by disability categories to this question was: blind, 21 percent "yes", 79 percent "no"; deaf, 51 percent "yes", 49 percent "no"; spinal cord injured, 46 percent "yes" and 54 percent "no."

Specific requests for information category for each disability group were as follows:

<u>Category</u>	<u>Number of Requests</u>
-----------------	---------------------------

Blind

Housekeeping	3
Tools	28
Braille	27
Personal Care	42
Navigation Aids	34

29 additional specific requests

Deaf

Communication Devices	185
Security Alarms	137
Telephone Aids	150
Oral Speech Devices	95

17 additional specific requests

Spinal Cord Injured

Personal Care	11
Transfer	7
Wheelchairs	7
Vans, Van Modification	11
Work Station Design	19
Seating, Cushions	6

8 additional specific requests

Based on these requests by categories and specific information requests, CRT assembled an informational resource manual (see Appendix) containing commonly requested information for all three disability categories. This manual was mailed to the 129 counselors originally included in the survey. A supplemental booklet for each disability category (see Appendix) was assembled based on specific problems outlined by counselors and mailed the counselors who had requested information for a specific client problem. Very unusual problems were handled on an individual basis.

The following is a report on findings and observation for each disability category with the primary emphasis on their vocational needs and objectives.

### Findings for Blind Clients

Information requests for the blind had by far the lowest client/request ratio of any of the groups. The greatest interest was in personal care and navigation aids. The blind category also had the most negative response to the question, "Do you feel adaptive aids and devices would assist you in the potential placement of this client?," with 79 percent responding "no." This was a surprising response considering the broad range of jobs that were listed as D.O.T. goals.

D.O.T. goals ranged from lawyers to taxi drivers (blind in only one eye). 98 of the jobs listed are commonly held by persons with college degrees and/or specialized training, while only 28 of the clients now hold degrees. Twelve of these degree-holders were listed as homemakers, four had non-established goals, five were goaled for clerical work, two are to be sewing machine operators, and one of these degree recipients is to be a dishwasher. Therefore, only four clients presently hold degrees for the 98 higher-education jobs listed.

Some of the counselors appeared to have unusual attitudes toward their clients' D.O.T. goals. For example, C249 has no need for any information for any of his clients and has seven female college-graduates, average age 32 years old, in clerical occupations, and others working in job categories, such as "social service," which included elementary-school educated clients.

The greatest common problem based on vocational goals and the lack of presently available equipment is the problem of utilizing commonly printed information. Attempting to at least partially solve this problem, CRT has proposed the personal, portable reading machine project (see Section III for proposal).

### Findings for Deaf Clients

The deaf category had the largest need for information, with communication devices and telephone aids the areas of greatest interest. Counselors of deaf clients had a positive response to the question asking whether adaptive aids and devices could assist in placing their clients (51 percent answered "yes"). The D.O.T. for the deaf category was also highly diversified. The ability to hear was not a factor in most of the jobs selected. CRT was not able to determine a common vocational technical need by the survey nor by follow-up phone conversations with counselors.

Voice recognition technology is an emerging field that may yield devices in the near future which will translate spoken words into a phonetic graphic display. These devices will be important communication breakthroughs for the deaf in both vocational and educational applications.

CRT is not proposing a project for this category at this time.



### Findings for Spinal Cord Injured Clients

Counselors with spinal cord injured clients had the largest need for information concerning workstation design, personal care, and van modifications. This category had the highest percentage of college-educated clients, coinciding with the highest percentage of jobs requiring higher education. The essence of the majority of the jobs selected is information exchange and processing. They appear to be appropriate job selections in these the jobs rely on mental capacities rather than physical abilities.

With mobility impairment, the greatest obstacles in a job environment are reach and accessibility. Workstations can be built which are custom-fitted for the remaining abilities of a spinal-cord injured person. Also, modification can be made to computer software to enhance increase performance, given the job task and the the method the person uses to interface with the computer.

CRT has determined that workstation design is a common problem with many of DRS' spinal cord injured clients. A proposal for the development of an adjustable, modular workstation can be found in Section III of this report.

TABLE 1  
OCCUPATIONS--SPINAL CORD INJURIES

11	Non-established
* 6	Computer Programmer
* 4	Bookkeeping **(2)
* 4	Electronic Technician
* 4	Lawyer **(2)
3	Homemaker
* 3	Receptionist *(1)
* 2	Rehabilitation Counselor *(1)
* 1	Administrative Assistant
1	Art Teacher
1	Auto Parts Sales
* 1	Business Management
1	Child Care
* 1	Clerical
* 1	Computer Operator
1	Customer Service
* 1	Data Processing
1	Horticulturist
* 1	Hospital Administrator
* 1	Insurance Analyst
1	Machine Operator
* 1	Medical Secretary
1	Micrographics Technician
1	Psychology
1	Psychometrist
1	Radio & TV Repair Helper
1	Sound Control
1	Telephone Solicitor *(1)
1	Truck Driver
1	Truck Weight Recorder
1	Youth Counselor

\*\*( ) number of college-educated in D.O.T. category

\* has a need for the proposed R&D project

TABLE 2  
OCCUPATIONS--DEAF

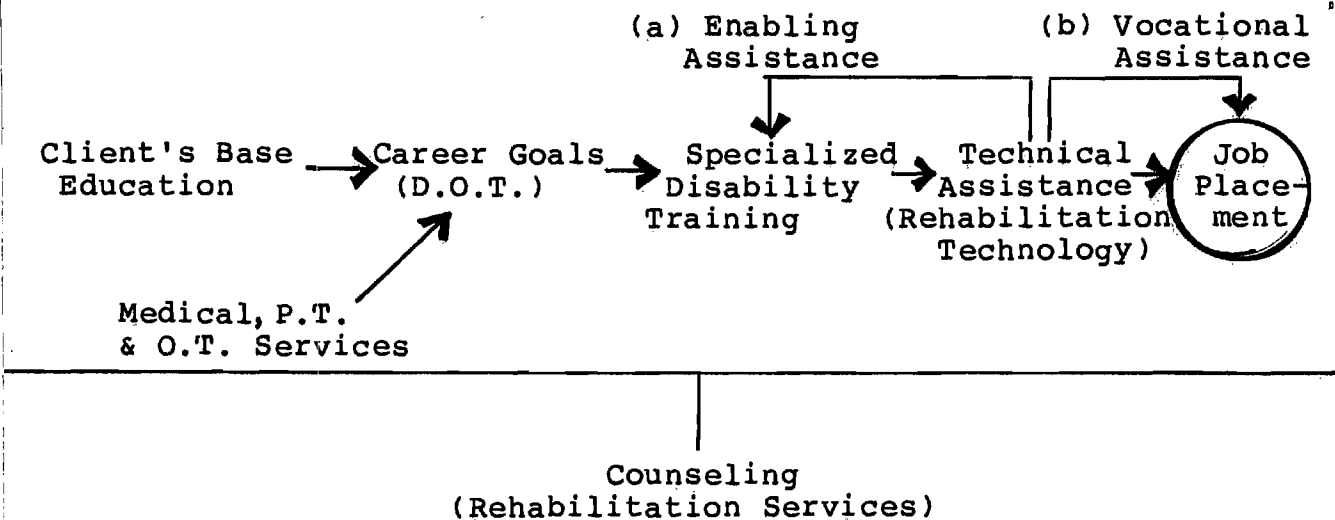
88	Non-Established **(2)	1	Public Relations
56	Clerical **(2)	1	Occupational Grouping
21	Teacher	1	Work Assistant Training
21	Factory	1	Linotype
15	Homemaker	1	Textile Worker
14	Mail Clerk **(1)	1	Engineer
14	Janitorial	1	Farmer
13	Welder	1	Pharmacist
12	Maid	1	Painter
12	Food Service	1	Cabinet Maker
11	Assembly Line	1	Waitress
8	Production	1	Radio Technician
8	Sheltered Work	1	Delivery Helper
8	Auto Body Repair	1	Laundry Attendant
8	Stock Clerk	1	Wood Working
8	Mechanic	1	Institution Attendant
8	Computer Programmer	1	Typist
8	Sewing Machine Operator	1	Recreation Leader
7	Carpenter **(1)	1	Service Station
7	Child Care	1	Truck Drivers Helper
6	Nurses Aid	1	Bakery
6	LPN	1	Microphotography
5	Warehouse	1	Civil Engineering
4	Data Processing	1	Residential Wiring
4	Business Administration	1	CPA
3	Maintenance	1	Upholstery
3	Bricklayer	1	Accountant
3	Data Entry	1	Diamond Setter
3	Machine Operator	1	X-Ray Technician
3	Dishwasher	1	Construction Worker
3	Houseparent	1	Personal Service
2	Laborer	1	Reader
2	Groundskeeper	1	Sanitation
2	Social Worker	1	Display
2	Keypunch	1	Electrician
2	Teachers Aide	1	Seamstress
2	Cook	1	Dentist
2	Bookkeeping	1	Artist
2	Drafter	1	No desire to work
2	Printing		

TABLE 3  
OCCUPATIONS--BLIND

123	Homemaking **(12)	*	1	Psychologist
66	Non-Established **(4)		1	Surveyor
39	Production		1	LPN
* 33	Computer Programmer		1	Cabinet Maker
18	Sheltered Work		1	Serv. Station Opr.
18	Machine Operator		1	Reel Operator Mfg.
17	Sewing Machine Operator **(2)		1	Sociologist
* 17	Clerical **(5)		1	Telephone Sales **(1)
* 13	Vending Stand Operator		1	Customer Service
* 12	Social Worker		1	Photography
* 11	School Teacher	*	1	Lawyer
11	Unpaid Family Worker	*	1	Mfg. Robotics
* 9	Sales **(3)		1	Medical Doctor
* 9	Business Manager	*	1	Apartment Manager
9	Laborer		1	Pool Hall Manager
8	Maid		1	Laundry Attendant
* 8	Broadcasting	*	1	Medical Lab Technician
6	Child Care		1	Criminologist
6	Cook		1	Retail Clerk
6	Mechanic		1	Community Svr. Adv.
5	Textile Worker		1	Carpenter
5	Ministry		1	Electrician
5	Farmer		1	Truck Driver
4	Assembly Line		1	Telephone Operator
4	Switchboard		1	Cosmetologist
4	Commercial Art		1	Group Leader
4	Dispatching		1	Janitorial
* 4	Engineer		1	Typist
3	Dishwasher **(1)		1	Systems Analysis
3	Cashier	*	1	Law Occupation
3	Masseur/Masseuse		1	Beekeeper
3	Waiter/Waitress		1	Gospel Singer
3	Food Service		1	Stock Clerk
3	Construction		1	Lumber Sorter
3	Nurses Aide		1	Generator Repairs
3	Broom Winder		1	Wood Working
3	Baker		1	Taxi Driver
* 3	Teachers Aide	*	1	Restaurant Onr. & Mgr.
* 3	Counselor	*	1	Journalist
2	Welder	*	1	Supply Clerk
2	Answering Service		1	Occupational Therapist
* 2	Receptionist		1	Volunteer
2	Utility Worker		1	Greenhouse Worker
2	Key punch		2	Self-Employed
2	Special Education		2	Physical Therapist
2	Musician		2	Secretary
2	Insurance Sales		2	Vocational Evaluator
2	Medical Transcriber		2	Psychology Technician

### General Observations

The project served to clearly identify the problem areas where rehabilitation technology can support traditional rehabilitation services. The fit of rehabilitation technology in the overall rehabilitative process falls into two categories: (a) Enabling Assistance- e.g. technical assistance for the development of adaptive equipment, training aids, and independent living aids; and (b) Vocational Assistance- e.g. job site modifications, removal of architectural barriers, development of specialized workstations, and software. This process operates under the overall guidance of counseling and rehabilitation services. It is show diagrammatically below:



The general observations listed here are given with respect to this diagram.

1) Many D.O.T. goals for the individual clients studied are inappropriate because of a poor fit between clients' education and their designated D.O.T. categories, a problem judged to be caused in part by poor evaluation procedures. Rehabilitation technology has no impact in this problem area.

2) In a number of cases studies, many had appropriate D.O.T. goals where rehabilitation technology would be of benefit in providing specific job-oriented adaptive equipment or devices to maximize clearly defined job capabilities.

3) A major problem identified was that of underemployment due to inadequate evaluation procedures and lack of specific means to create the ability to perform on jobs that might be available. One cause stems in part from the fact that no distinction is made as the quality of placement in the counselors own performance evaluations. A second cause is a general ignorance of the potential of rehabilitation technology and the application of adaptive equipment in specific job placement opportunities. And a third of the reluctance of employers to place individuals in higher level employment without safeguards for job performance, which can be enhanced by adaptive aids and technical assistance to employers.

4) A clear need on the part of vocational rehabilitation counselors and job place specialists is shown.

5) Follow-up telephone surveys of randomly selected counselors revealed the opinion that technical assistance was needed for potential employers as much as for clients to effect greater job placements. This was particularly the case in rural areas.

6) The surveys also indicated a great disparity between what is commonly considered as rehabilitation technology and adaptive equipment, and what is actually available. Counselors for the most part have an extremely limiting view of adaptive equipment, thinking primarily of glasses, braces and hearing aids, and having little knowledge of specialized workstations, job site modifications, and the like.

7) These survey results indicate a substantial need for information and information programs to acquaint counselors and placement specialists with both the potential and availability of rehabilitation technology.

### Recommendations

1) Improve evaluation procedures to better match client abilities with realistic job potentials (D.O.T. goals). (This is presently being addressed by the Georgia Career Information System at Georgia State University.)

2) Make clear distinctions of level of job potential among clients with appropriate D.O.T. goals to expedite identification of those cases where rehabilitation technology might be most effective.

3) Undertake State-wide education program to fully inform vocational counselors and placement specialists of the benefits and availability of rehabilitation technology.

4) Offer technical assistance services directly to potential employers.

5) Extend CRT's TechKnowledge information service to provide direct dial-in technical assistance State-wide to vocational rehabilitation counselors and job placement specialists.

6) Identify other target disability groups and extend systematic technical assistance and informational surveys to them.

7) Amend State policy so that good-risk clients can be provided computer equipment and other specialized devices for on-job use.

8) Research the potential for establishing a non-profit foundation to assist through loan guarantees and other financial mechanisms, these good-risk clients to receive assistance in purchasing computer equipment and other specialized job-related devices.

9) Identify and contact potential manufacturers to produce and market adaptive aids and independent living products that may result from technical assistance projects.

10) Set up permanent working arrangements between CRT and the Roosevelt Warm Springs Institute for product development, testing, and evaluation of adaptive equipment.

11) Develop guidelines for purchasing or developing innovative devices.

12) Initiate the three programs proposed in Section IV of this report.



### III - Product Development Proposals

#### 1) Portable Reading Machine: "Cyclops"

A review of the D.O.T. goals for blind clients revealed many job ambitions that require higher education and/or special training. Many of the jobs that were selected require information processing and transfer. Obviously, a blind person cannot process information that is not brailled or verbally recorded. This barrier in itself will prevent many of these clients from attaining their career goals and will prevent well-educated blind persons from competitive employment. There exists a common need to convert printed material into a usable form for the blind.

Presently, the solution to this problem is the Kurzweil Reading Machine. This machine can read printed text aloud from books, magazines, etc. The current price for the Kurzweil Reader is \$29,800 which is far beyond the affordable price for individual ownership. The machine is table-top size and is not portable, which is a hinderance for vocational applications. Most of the machines are owned and operated by public schools and libraries.

A reading machine has three basic sub-parts: the optical scanner which "sees" the printed material, a computer that reads what is seen by means of character recognition software, and a speech synthesizer which speaks the words. The optical scanner transmits an electronic image of each letter to the computer. The computer determines what the letter is and then transmits letter strings to the voice synthesizer, where the letters are recognized as words and the words are spoken.

A technical team with expertise in this area at Georgia Tech is of the strong opinion that, with recent developments in the technologies involved, a portable, and more reasonably priced reading machine can be developed. It is estimated that a reading

machine can be developed that will perform comparably to the Kurzweil Reader, and could be sold for \$6,000-\$8,000, or possibly less. The machine would be approximately the size of a portable typewriter. Personal ownership and portability of a text-reading machine would have a tremendous impact on the educational and vocational potentials of visually-impaired people.

For education of the blind, a personal, portable, reading machine would give access to common reading materials. It would allow the user independence in using educational resources at various locations. The student would not be limited in subject areas where brailled materials are not available. Also, since a user's listening speed is faster than the braille reading speed, the educational process would be accelerated.

For vocational users, a personal, portable reader would allow access to common office information such as memos, letters, invoices, etc. This function is a necessity for many of the jobs that are listed for DRS clients, such as computer programmers, clerks, and business managers. This mechanism would allow an employee to keep up to date in their career field by reading technical and professional journals (most of which are not available in braille).

#### A) Project Approach

CRT proposes to design and prototype a personal, portable reading machine with a two-phase project program. This proposal is for Phase A - Exploratory Prototype. In this phase, CRT proposes to test the feasibility of producing a low-cost, portable reading machine by using readily available hardware components and writing original optical character recognition software. A working prototype will be the end product of the project. With this prototype, the user would scan printed material with a hand-held scanner, using it much in the same way that an Optacon is used.

Phase B - Product Development is currently in the proposal research stage at Georgia Tech. This proposal will be submitted to the Veterans Administration for a funding request. Preliminary conversations with the V.A. have indicated a very positive possibility for funding. This phase of the program is to develop a production-capable device building on the knowledge gained in Phase A and in prior research in this area. This phase would also deal with extensive testing and refinement based on user evaluation.

B) Statement of Work for Phase A- Exploratory Prototype

- 1) Design and build hand-held optical scanner; test and refine.
- 2) Design and build character recognition processing computer; test and refine.
- 3) Design and build speech synthesis module; test and refine.
- 4) Perform human factor studies of end-user population and determine parameters for complete unit design.
- 5) Design and build housing and controls for electronic components; test and refine.
- 6) Test completed unit with blind users and evaluate.
- 7) Final Report.

This project can be completed in an 8-month period from initiation. Anthony J. Bradshaw of CRT will serve as project director and will manage all phases of technical development.

## BUDGET

Personal Services	4,416
Fringe Benefits	1,038
Travel	50
Materials	300
Consultants	7,500
Ga. Tech Overhead	<u>5,618</u>
	\$ 18,922

COMMON NEED LISTING for  
Personal, Portable Reading Machine - Blind

<u>Counselor</u>	<u>Client</u>	<u>D.O.T. Goal</u>
Robert Rasbury	Maria Ball	Clerical
Robert Rasbury	Greg L. Young	Business Manager
Robert Rasbury	Grelaine Holiday	Social Worker
Robert Rasbury	Racheal Bell	School Teacher
Robert Rasbury	Nerdia Ball	Social Worker
Robert Rasbury	Gary L. Long	Engineer
Robert Rasbury	Barbara E. Gunter	File Clerk
Stephen Burden	Johnny Vickery	Psychologist
Wayne Sanders	Mary S. Speth	Social Worker/ Computers
Wayne Sanders	G.L. Wilson	Radio Announcer
Wayne Sanders	Char. Strickland	Secretary
Wayne Sanders	Lawrence Tomecek	Community Service Advisor
Wayne Sanders	Sammy Evans	Administrator
Wayne Sanders	Lauren Logan	Teacher
Wayne Sanders	Earl E. Sabot	Teacher
Wayne Sanders	William Minter	Electrician
Wayne Sanders	Ann M. Morrison	Teacher
Wayne Sanders	Mike W. Ivey	Business Adminis.
Reuben Tuck	Ronnie Grier	Criminologist
Reuben Tuck	Christopher Reid	Minister
Ardine Harris	Sanford Davis	Pastor
George Littlefield	Patricia Coley	Clerical
George Littlefield	Betty Colbert	Clerical
George Littlefield	Marilyn Andrews	Recept./Clerical
George Littlefield	Adam Shapiro	Telephone Sales/ Customer Service
George Littlefield	Patricia Hampton	Social Service
George Littlefield	Sarah Mercado	Clerical
George Littlefield	Suzanne Schilling	Clerical
George Littlefield	Brian Burch	Electrical Engineer
George Littlefield	Elaine Kirby	Clerical
George Littlefield	Lee Ford	Business Management
George Littlefield	Tommie Johnson	Business
George Littlefield	Nadir Rasool	Ministry
George Littlefield	Virginia Gray	Social Service
George Littlefield	Mildred Lawhorn	Clerical
George Littlefield	Crystal Humphries	Clerical
George Littlefield	Carl Cunningham	Lawyer
George Littlefield	Sheila Gernovitz	Special Education
George Littlefield	Donna Grogan	Clerical
George Littlefield	Brenda Pittman	Social Service
George Littlefield	Jewell Madison	Clerical
George Littlefield	Lorenzo Powell	City Management
George Littlefield	Christi Baldridge	Social Service
George Littlefield	John K. Scroggs	Broadcasting/

George Littlefield  
 George Littlefield  
 George Littlefield  
 George Littlefield  
 George Littlefield  
 George Littlefield

George Littlefield

George Littlefield  
 George Littlefield  
 J.F. Bennett  
 John Cureton  
 John Cureton  
 John Cureton

John Cureton  
 Francis McDaniel  
 Francis McDaniel  
 Francis McDaniel

Francis McDaniel  
 Francis McDaniel  
 Francis McDaniel  
 Francis McDaniel  
 Francis McDaniel  
 Beverly Manley  
 Beverly Manley  
 Beverly Manley  
 Beverly Manley  
 Leigh Harris  
 Leigh Harris  
 Leigh Harris  
 Leigh Harris  
 Leigh Harris  
 Wayne Sanders  
 Wayne Sanders  
 Beverly Manley  
 John Cureton  
 John Cureton  
 John Cureton  
 Stephen Burden  
 Beverly Manley  
 Beverly Manley  
 John Bennett  
 Billie M. Farris

Carolyn Harris  
 Donna Kenney  
 Jerome D. Berman  
 Jim Clarke  
 Linda Graham  
 Liz Miller  
 Bob Diebhold

Louisa Calvary

Charlie Moye  
 Jamie Valencia  
 Thomas O. Bales  
 Thomasseana Worthy  
 James Nobles  
 Donnie M. Staples

Betzaine Carter  
 Robert Thompkins, Jr.  
 Charlotte Clarke  
 Herbert Galbreath

Leonard Stinson  
 Anita Halstead  
 Cynthia Kitchens  
 Danny W. Bates  
 Donald A. Penley  
 Patricia D. Dixon  
 Nita L. Tillman  
 Bradley F. Gliett  
 Dorothy Rudd  
 Sally Diamuke  
 Robert Griffin  
 April L. Holland  
 Gary M. Carter  
 Carrie E. Cooper  
 Carlos Evans  
 Charlene McClendon  
 Carol Bryant  
 Robert A. Delcon  
 William Garner  
 Jimmie Crammon  
 Deborah K. Lovell  
 Willie L. Bivins  
 Barry McKinnon  
 Michael Bondurant  
 Sheila L. Jones

Dispatching  
 Sales-Insurance  
 Social Science  
 Medical  
 Electrical Engineer.  
 Clerical  
 Special Education  
 Dispatch/  
 Broadcasting  
 Medical  
 Transcription  
 Medical Lab Tech.  
 Business Management  
 Social Service  
 Teacher  
 Phys. Ed. Teacher  
 Medical  
 Transcription  
 Journalist  
 Receptionist  
 Social Worker  
 Secondary Ed.  
 Teacher  
 Psychology Tech.  
 Psychology Tech.  
 Secretary  
 Social Worker  
 Systems Analyst  
 Teacher (Volunteer)  
 Teacher's Aide  
 Counselor  
 Teacher's Aide  
 Clerical  
 Math Teacher  
 Clerical  
 Minister  
 Teacher's Aide  
 Radio Announcer  
 Teacher  
 O.T.  
 Insurance Salesman  
 Radio Broadcaster  
 Radio Broadcaster  
 Social Work  
 Counselor  
 Radio Broadcaster  
 Rehab. Counselor  
 Social Work Tech.

## 2) New Electronic Workstation: "NEWS"

Spinal cord injured and mobility-impaired clients have a common vocational need for workstations that are adjustable and adaptable to their specific job requirements. Mobility-impaired clients, regardless of education and training, must have an appropriate workstation to maximize the functional usage of their remaining range of motion.

By enhancing remaining abilities, a properly designed workstation could aid with the problem of underemployment. A client could perform some jobs that previously would not have been feasible for them to do. With the increasing proportion of jobs in the information processing and services area (one source estimates 75 percent of U.S. jobs by 1990 will involve the use of a computer), physically disabled people have the potential of a greater range and choice of jobs. These jobs tend to be "thinking" jobs. Therefore, the manual aspects of office work are the problems the new workstation will attempt to solve.

With proper training, disabled people can easily perform the mental tasks required in many of these jobs. But if it takes them 10 times the normal to retrieve a file or 5 times the normal to replace a file or 3 times the normal to use a phone system, their total daily production is lessened. If they cannot make use of files, shelves, and drawers because of reach difficulties, they cannot use their allotted space effectively. These problems must be overcome if these people are to become competitive on the job market.

When developed, specialized modules would be fitted to standard office systems (such as the Herman Miller office systems). The workstation would have the outward appearance of a regular office cubicle. Modules would be selected based on job functions and tasks and the disability of the particular client. The client

could own the workstation so they would have greater job opportunities by not inflicting additional costs on potential employers and they could change jobs more easily.

#### A) Project Approach

For this project, CRT proposes to design and build adjustable modules for the following functions: computer use; telephone and other communications; filing and retrieving, paper handling; reference handling; and all-purpose storage.

From these modules, CRT will construct 2 complete workstations. One workstation will be for lawyer use and the other workstation will be for bookkeeping. These workstations will be complete with computers for these jobs and appropriate interfaces for the clients chosen to use them. Being modular, the workstations can be up-dated as required by the client.

CRT is currently constructing a modular workstation for a DRS client who is disabled by arthritis. This workstation will serve as a model for evaluation that will provide input for the design of the new workstations.

Several of the modules will be power operated, such as the filing system, and the reference storage system, so task time can be decreased. Control of these modules will be push-button so that they can be operated by a mouthstick. We will also explore new voice recognition systems for computer interfacing (Texas Instruments recently introduced a unit such as this) for the severely disabled. Voice recognition interfacing would allow control of a computer and communication devices with only the use of the individual's voice.

#### B) Statement of Work

The task sequence for this project is as follows:



- 1) Study human factor requirements for various types of mobility disabilities.
- 2) Design modules for previously listed job tasks.
- 3) Identify readily available adaptive equipment that will be incorporated in the workstation design.
- 4) Identify computer systems and interfaces that will be used.
- 5) Construct modules and test.
- 6) Construct 2 complete workstations with these modules; test.
- 7) Adjust workstation for clients selected to use them.
- 8) Write any specialized computer software for clients' use if needed.
- 9) Evaluate.
- 10) Report.

This project can be completed in a 4-month period from initiation. Anthony J. Bradshaw will serve as project director and will coordinate all aspects of the project.

If DRS determines the workstation are applicable for other clients, additional workstations can be fabricated from working drawings (supplied by CRT in this project) at local wood-working shops.

## BUDGET

Personal Services	6,624
Fringe @ 23.5	1,557
Materials	1,500
Equipment	9,000 (no overhead)
Travel	200
Consultants	2,000
Ga. Tech Overhead	<u>6,178</u>
	\$ 27,059

COMMON NEED LISTING for  
WORKSTATIONS - Spinal Cord Injured

<u>Counselor</u>	<u>Client</u>	<u>D.O.T. Goal</u>
Sam Richwine	Elebert J. Ward	Bookkeeper, tax work (in home)
Sam Richwine	Ted D. Allison	Electronic Technician
Grady Allen	Russell Dobbins	Admin. Asst.
Martin Yirve	Stephanie Davis	Lawyer
Tom Tedards	Charles Kenner	Receptionist
Tom Tedards	Bruce Dozier	Receptionist
Tom Tedards	Larry J. Caton	Attorney
David Sinclair	Robert Rodriquez	Bookkeeper
David Sinclair	Douglas Thomas	Electronic Technician
Kathleen Criessler	Harold McCarty	Hospital Administrator/ Insurance/Art Teacher
Ed Bailey	Tony Boatright	Lawyer/Business Mgr.
Ed Baily	Terry Williamson	Computer Programmer
Bill Ballew	Thomas H. Lau	Computer Programmer
Tom Dennis	Micki Weatherhead	Bookkeeper/Music (Sound Control)
Steven Flanigan	Jill Friedlander	Receptionist
Miriam Smith	Mary N. Earwood	Medical Secretary
Howard Allen	Jenny Langley	Computer Programmer
Allen Beall	Robert W. Habas	Accts-Receiveable/ Computer Programmer
Lester Walker	Claude Norfleet	Clerical
Frank Bell, Jr.	Brian K. Sellers	Micrographics Tech./ Radio Dispatcher
Ed Bailey	Lewis Smith	Radio & TV Repair
Walter Dance	Chris D. Tate	Computer Programmer
Fulton Cooper	Scott W. Parker	Electronics Technology

#### IV - Program Development Proposals

Based on information obtained in this project, CRT has determined that there exists a need for technical assistance in three major areas which would be supportive of various disabilities and would involve most types of employment opportunities. The first area of concern deals with clients who have potentials in the area of computer operation. This program would assist in selecting appropriate computer systems and the writing of specialized software when required. The second area involves the sheltered workshop program with the goal being to place more severely disabled people and to aid with increasing production and efficiency by appropriate design. The third area is to provide technical support for potential employers. This program would work closely with DRS placement specialists and counselors in trying to reduce employer reluctance in hiring the handicapped. These three programs are detailed in the following sections.

1) Vocational Computer Application Program - "VOCAP"

In keeping with current trends in the open job market, DRS clients need increased access to computer oriented jobs. These jobs are both typical computer jobs and jobs that were previously performed manually but can now be performed with computer assistance.

This program would assist DRS with specifying hardware systems for a potential job on an individual client basis. The equipment could be employer-owned, provided by DRS or owned by the client. CRT would analyze the potential job and then make recommendations for equipment based on the client's abilities and needs.

The second area of assistance would be to provide "friendly" customized software. This software could be for use with an employer's existing equipment or with privately or State-owned equipment. Customized "friendly" software can increase productivity by decreasing control interfacing time. Also, non-typical computer jobs could be arranged by development of specialized software with the appropriate hardware equipment. This program would be beneficial to both home and office employment situations.

## 2) Sheltered Workshop Assistance Program - "WORKAP"

Sheltered workshops as a primary employer of disabled persons are in considerable need of specialized devices and procedures for expanding production and increasing their market competitiveness. The majority of workshops have little or no access to advanced production technology or efficient means to develop adaptive equipment for their workers.

The WORKAP Program would provide technical help to individual sheltered industries to develop innovative new approaches to meet their production and employee needs. The assistance would be in the form of consulting on plant layout and production facilities, design and development of specialized devices to assist production, information services for identifying and locating existing products and equipment to improve production, and the removal of architectural barriers. WORKAP could be operated in conjunction with EMPLOY where feasible to assist client companies in working more effectively with sheltered workshops.

The potential of WORKAP is to greatly improve the efficiency and effectiveness of sheltered workshops both in competing with their markets and opening up job opportunities for a greater range of disabled persons than can be presently employed. In addition, it provides a base whereby workshop managers may increasingly develop their skills and their own operations helping to build a reservoir of able professional managers within the State.

### 3) Placement Specialists/Employer Technical Assistance Program- "EMPLOY"

Discussion with DRS placement specialists and counselors have indicated a need to increase employer participation and cooperation. CRT proposes to work with potential employers through DRS placement specialists in an attempt to obtain more job positions for DRS clients. If the employer has an opening, CRT will analyze how the job could best be performed by a disabled person. Once the employer is convinced to give jobs to DRS, qualified clients would be identified to fill the positions and CRT would work with the clients to develop appropriate workstations, adaptive equipment and other specialized devices or procedures to maximize their performance.

The opportunities of such a program are listed below:

- 1) Increasing the percentage and quality of placements.
- 2) Creating a "high-tech" approach in hiring the disabled.
- 3) Creating a means of accessing Ga. Tech connections (many of whom are employers) in industry.
- 4) Assisting employers with removal of architectural barriers in a cost-effective manner.
- 5) Creating a means of working jointly with the Georgia Career Information System at Ga. State University.

To facilitate this program, CRT would develop marketing tools for use by placement specialists. Brochures and other materials as needed would tie into the workstation designs, VOCAP, TechKnowledge, and adaptive equipment development programs for employers.

A CRT staff member could accompany placement specialist when calling on employers if requested.

These projects would be initiated by requests from placement specialists or DRS counselors.



## V - Action Plan for Program Implementation

The implementation of "VOCAP", "WORKAP" and "EMPLOY" will require expertise from several different technical disciplines. A full-time technical staff at Georgia Tech is needed to support these programs as well as the adaptive equipment projects and a State-wide TechKnowledge information system.

The following technical personnel are needed to implement these programs:

- A) information and computer-science engineer
- B) electrical engineer
- C) industrial designer
- D) occupational therapist/information specialist
- E) rehabilitation engineer (could be stationed at Warm Springs)
- F) technical services coordinator.

The staff would work on a project basis and would recruit other members of the Georgia Tech faculty and staff when additional technical support is needed.

To establish these programs, a central fund could be set up to support consulting and design/development activities. The CRT TechKnowledge information service would be expanded to include non-product data in program areas. Access to both TechKnowledge and technical program assistance would be provided using procedures similar to those now used for adaptive equipment projects with vocational rehabilitation counselors.

The appropriate funding level cannot be firmly established at this time. It is suggested that the program be initiated on a pilot basis for a one-year period. Performance and costs would be closely monitored and a realistic budget determined on the basis of actual expense.

Technical staff should be hired on a yearly basis, while project funds for each specific program would be used for materials, travel, equipment, student assistants, indirect costs and outside consultants if needed. By being under DRS contract on a full-time basis, the technical staff will be "on-call" for consultation as needed by DRS.

The technical staff can also provide technology awareness and training seminars to aid counselors in staying abreast of adaptive equipment development and usage and to demonstrate technological approaches in job placement.

A detailed organization and procedural plan can be constructed jointly by DRS and CRT should DRS pursue any or all of these proposed programs.

VI- APPENDIX



Center for Rehabilitation Technology



Georgia Institute of Technology  
Atlanta, Georgia 30332

RESOURCE MANUAL  
ON ADAPTIVE AIDS AND DEVICES  
FOR VISUALLY IMPAIRED,  
HEARING IMPAIRED,  
AND SPINAL CORD INJURED PERSONS.

Prepared for:  
Department of Rehabilitation Services,  
STATE OF GEORGIA

Contract # D48614

November, 1983



Center for Rehabilitation Technology  
Georgia Institute of Technology

College of Architecture  
Georgia Institute of Technology  
Atlanta, Georgia 30332

(404) 894-4960

November 23, 1983

TO DRS FIELD COUNSELORS

The Center for Rehabilitation Technology (CRT) at Georgia Tech is working with the Department of Rehabilitation Services to build a program to assist DRS counselors in solving informational and specialized adaptive equipment needs of their clients. The goal of this project is to find out what your information needs are and determine where there are common needs for adaptive aids and requirements for research and development in rehabilitation technology throughout the State.

The enclosed manual is part of the project and is given to you as a preliminary reference manual. This manual contains general information on adaptive aids and devices for this project's three targeted groups: the visually impaired, hearing impaired, and spinal injured. Counselors who supplied CRT with more specific information on their clients' special needs will receive further information soon.

We would appreciate your comments on the manual. We expect to upgrade it periodically and need your comments so as to make it useful to you.

The CRT, by contract with DRS, provides informational services to DRS field counselors free of charge. If you have any questions or requirements for adaptive aids and devices; removing architectural barriers; job site modifications; and so forth, call the CRT, identify yourself as a DRS field counselor and describe the problem as specifically as possible. Our information specialist will respond to your request in a few days by letter or telephone.

Our telephone number until January 1, 1984, is 894-3476. After Jan. 1, it will be 894-4960.

We appreciate working with you and especially thank those who participated in this project. We hope that we can be of service to all of you in the future.

Sincerely,

---

Anthony J. Bradshaw,  
Technical Services Coordinator

cc: T. Gaines  
D. Taylor  
L. Meenach

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Richard Martin,  
Director



Office of Interdisciplinary Programs  
Georgia Institute of Technology  
A Unit of the University System of Georgia

A Catalog of Commonly-Used Products for Blind Persons  
or Those with Low-Vision

I N D E X

I. Braille

Mailing.....	1
Reading.....	1-2
Printing, Embossing, Typewriting.....	3
Writing.....	4-6

II. Housekeeping

Cleaning.....	1
Cooking.....	1-3
Magnification.....	4-5
Safety/Locks.....	5
Sewing.....	6

III. Housekeeping Part II

Atlases, Maps.....	1
Cards, Greeting.....	1
Games.....	1-4
Pets.....	4
Purses.....	5
Talking Books (Free).....	5

IV. Medical Care

Blood Pressure.....	1
Glucometer.....	1
Pill Organizer.....	1
Scale.....	1
Stethoscope.....	1
Syringes.....	2
Syringe Devices.....	2
Thermometer.....	3
Uricator (Blood sugar).....	3

V. Navigation

Beacons.....	1
Canes.....	1-2
Reflective Badges.....	2
Sensors.....	2-3
Spectacles.....	4

VI. Tools

Calculators.....	1-2
Computers.....	3-4
Hand Tools.....	5-9
Telephones.....	10
Watches, Clocks.....	10-11



## BRAILLE

Mailing - 1) Braillegrams and Large-Print Messages. Large-print is 14-point type; braille messages are automatically translated into braille. Delivered by mail.

\*\*\*Western Union Telegraph Company

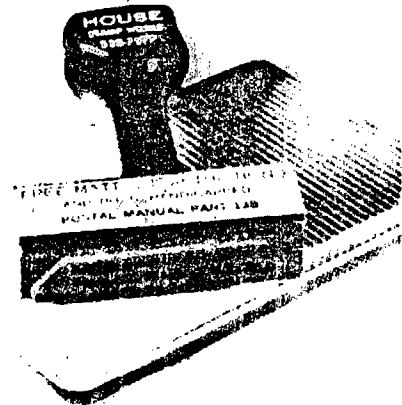
2) "Free Matter for the Blind" rubber stamp. Blind persons can mail recorded or brailled letters free if such wording appears on the envelope.

\*\*\*Independent Living  
Aids, Inc.



3) "Free Matter for the Blind and Physically Handicapped" rubber stamp.

\*\*\*Dialogue Publications, Inc.



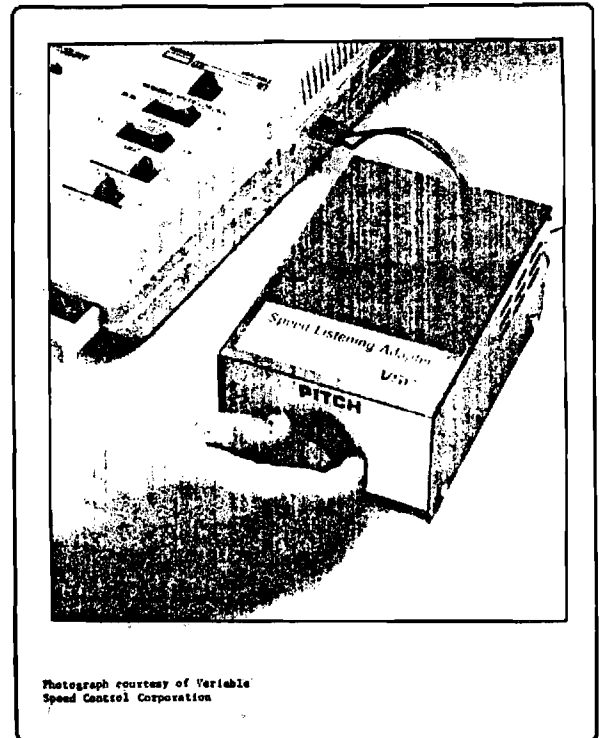
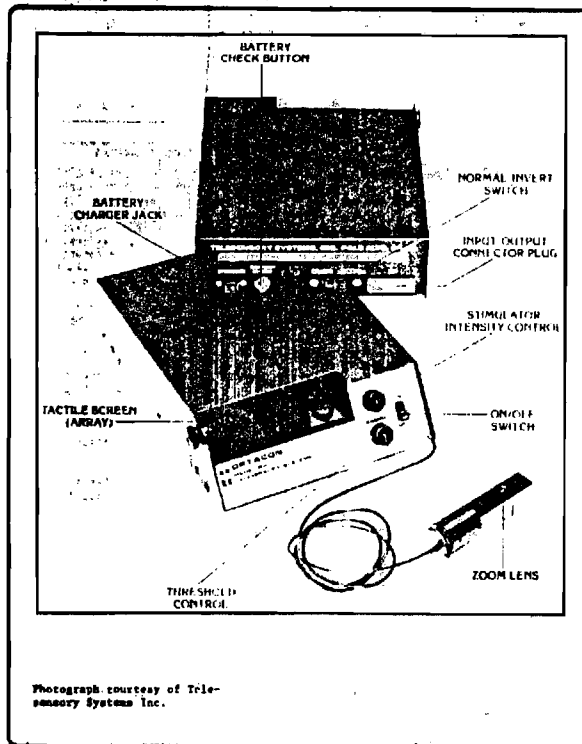
Reading - 1) Light Probe. Small, lightweight probe emits different pitches to detect the presence of print and light, and the reflectivity of a surface. Adjustable sensitivity control, e.g. for typing or detecting on/off position of light.

\*\*\*American Foundation for  
the Blind



- 2) Optacon Print Reading System. Optical to Tactile Converter. Camera scans print, translates it into enlarged, vibrating representation. Requires training in Optacon method.

\*\*\*Telesensory Systems, Inc.



- 3) Solid Dot Magazine Cover. Reading case to support solid dot periodicals, cord to hold magazine in place inside spine.

\*\*\*Royal National Institute for the Blind

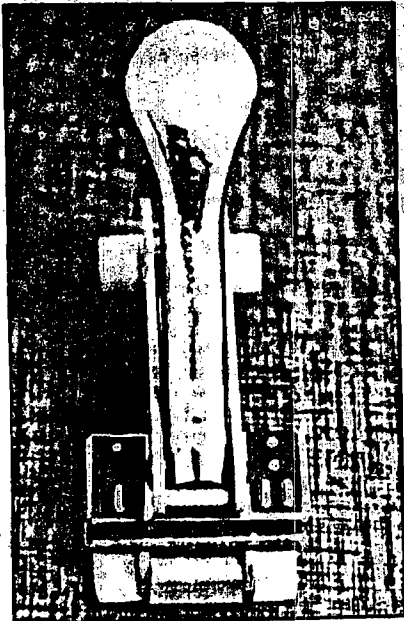
- 4) Variable Speed Control<sup>TM</sup> Listening Adapter. For use with Library of Congress and later-model cassette recorders. Braille markings and braille and large-print instructions. Can pitch correct sound at up to 2.5 times faster than recording.

\*\*\*Variable Speed Control Corporation

Printing,  
Embossing,  
Typewriting

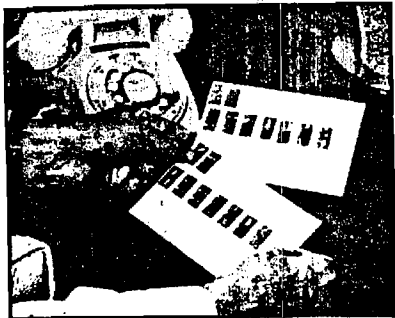
- 1) Braille Embossing Press. Rotary press; metal master plates. Maximum speed 10,000-12,000 sheets per hour; maximum size roughly 20" X 13". Custom-built to any size.

\*\*\*Timson Ltd.



- 2) Fisburne Alphabet for the Blind. Dots, dashes and slashes instead of braille. Embossed characters to be felt. Letters are also used as numbers. Thermoform master as training aid.

\*\*\*Fishburne Engineering



- 3) Marburg Braille Duplicator. Flat bed press; can be used by one person.

\*\*\*Deutsche Blindenstudienanstalt

- 4) Stereographic Machine. Steel; motor-driven. Uses plates up to 11" X 15"; embosses up to 42 cells per line. Automatic return.

\*\*\*American Printing House for the Blind

- 5) Stereographic Machine. Motor-driven; braille plate-embossing.

\*\*\*Howe Press of Perkins School for the Blind

- 6) Typewriter. IBM Braille Electric. Correction key. Uses braille paper stock, special platen assures legibility of embossing. 88-character keyboard, 63 cell configurations for all grades of braille code. Braille standard line spacing.

\*\*\*IBM Corporation  
Products Division

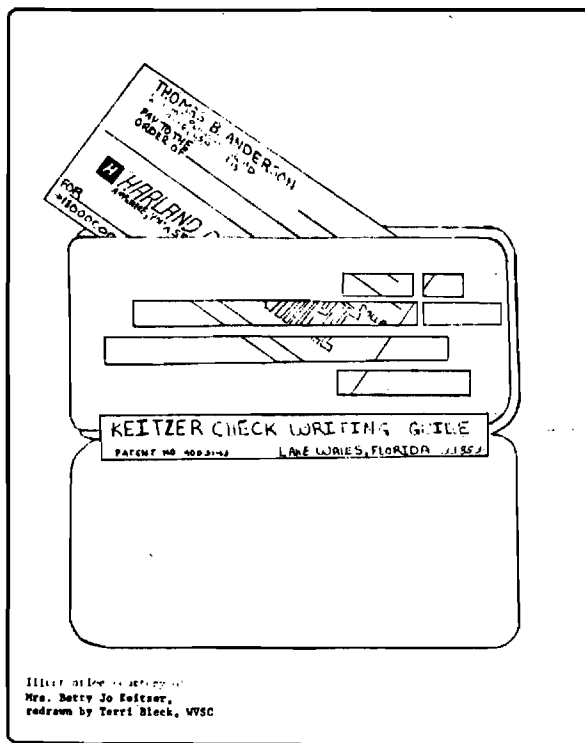
- 7) Typewriter. Perkins Brailier. 6 conventional keys, one for each braille cell. Margin stops with warning bell. Comes in both manual and electric models; extension key for one-handed braille in manual model.

\*\*\*Howe Press of Perkins  
School for the Blind

Writing - A. Guides

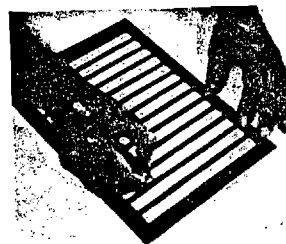
- 1) Keitzer Check Writing Guide. Plastic template corresponds to the spaces on standard stub-end check. Available in right and left-handed models.

\*\*\*Mrs. Betty Jo Keitzer



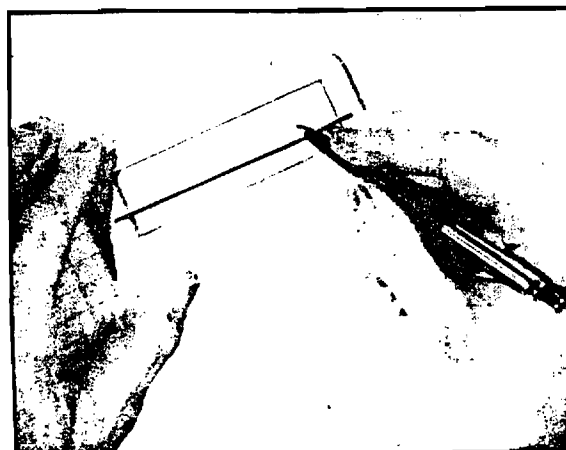
- 2) Letter Writing Guide. 8 1/2" X 11" sturdy plastic sheet with 13 line spaces.

\*\*\*Independent Living Aids, Inc.



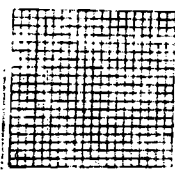
- 3) Signature Guide. Aluminum with rubber backing. Elastic guideline permits dropping below line for script letters. Takes pencil or ball-point pen only.

\*\*\*American Printing House for the Blind



B. Notebooks, Paper

- 1) Embossed and Bold-Line Graph Sheets. Embossed graph sheets have dots for horizontal and vertical lines; solid line axes; letter-size and 11 1/2" X 11" sizes, and 3 different line spacings available. Bold-line graph sheets available in 3 sizes. Also, polar (circular) graph sheets available.



\*\*\*American Printing House for the Blind

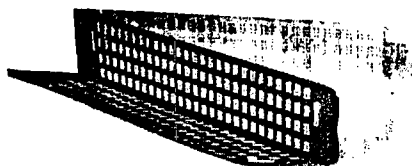
- 2) Notebooks with Punched Braille Paper Fillers. Braille notebooks to fit standard braille paper, sizes 10" X 12" to 8" X 12". Imitation leather board covers; 3 rings.

\*\*\*American Printing House for the Blind

C. Slates

- 1) Braille Slate. Aluminum in 27 cell/4 line and 19 cell/6 line models. Plastic in 27 cell/4 line; plastic only includes standard stylus.

\*\*\*Independent Living Aids, Inc.



- 2) Jumbo Slate. E-Z Read oversize cell and dot; 18 cell/ 4 line. Includes special stylus. Anti-slip tape on back.

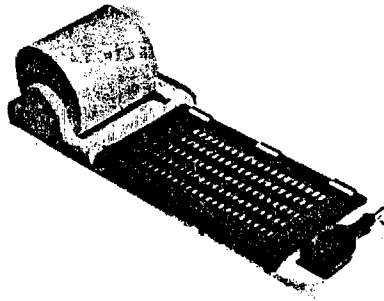
\*\*\*Howe Press of Perkins School for the Blind

- 3) Pocket Braille Slate Kit. Black vinyl cover pouch holds 19 cell/ 6 line slate and pencil stylus. Two additional pockets for braille paper. 3 5/8" X 6 1/2".



\*\*\*American Foundation  
for the Blind

(Note: paper for slate kit sold in 100 sheet packets)



- 4) Slate Memo Kit. Paper-roll fed memo, 10" X 3". Magnetic stylus attaches if not in use. May be hung on wall or carried as well as set on desk. Paper rolls (also sold) supply approximately 168 memos.

\*\*\*Independent Living Aids, Inc.

D. Styluses

- 1) Pencil stylus. Standard point and eraser ends. Pen shape; pocket clip.

\*\*\*American Foundation for the Blind

- 2) Pencil stylus. Same as above.

\*\*\*Independent Living Aids, Inc.



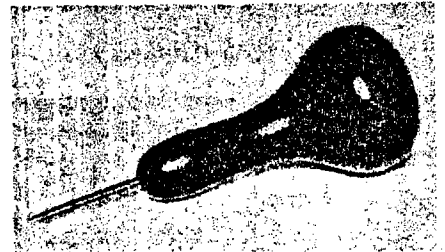
- 3) Standard stylus. Black enamel handle with metal tip.

\*\*\*American Foundation  
for the Blind



- 4) Standard stylus. Same as above.

\*\*\*Independent Living  
Aids, Inc.



## HOUSEKEEPING

Cleaning - Folding Dustpan. Forms funnel-like spout.

\*\*\*Independent Living Aids, Inc.

### Cooking - A. Draining

- 1) Locklid Easy-Drain Saucepan. Lid locks in place for cooking or draining. Porcelain/teflon interior, 3 Qt. size.



\*\*\*Independent Living Aids, Inc.

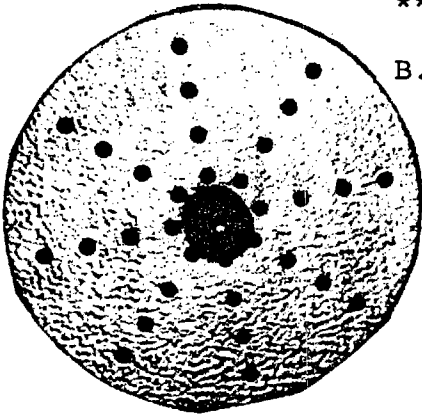
### B. Frying

- 1) Bacon crisper. Aluminum disc.

← \*\*\*American Foundation for the Blind

- 2) Bacon crispers. Glass or aluminum, round or square.

\*\*\*Independent Living Aids, Inc.



### C. Labelling

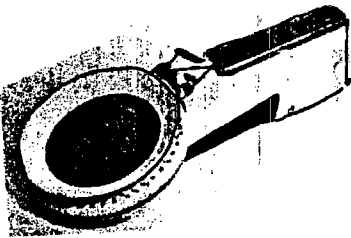
- 1) Canned Goods Marking Kit, and Extra Strips and Fasteners. Package includes 25 strips and bands for braille marking with stylus and slate (not included). For size #10 can and smaller.



\*\*\*American Foundation for the Blind

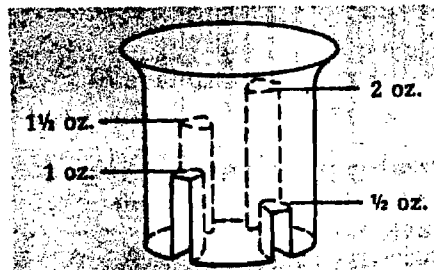
- 2) 3M Braille Labeler. Embosses braille on vinyl and magnetic tape. Optional standard alphabet dial.

\*\*\*American Foundation for the Blind



### D. Measuring

- 1) "E-Z Read Jigger" 4 platforms inside cup for finger-touch measurement. 2 Oz. size.



\*\*\*Independent Living Aids, Inc.



- 2) Sugar Meter. Glass base with plastic conical top. Dispenses 1/2 teaspoon dry ingredients.

\*\*\*American Foundation for the Blind

E. Slicing, Cutting, Chopping, etc.

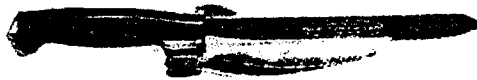


- 1) Food & Onion Chopper. Glass jar with spring-action chopper.

\*\*\*Independent Living Aids, Inc.

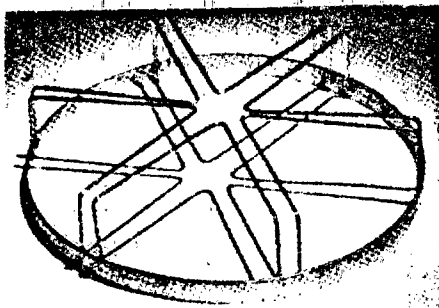
- 2) Magna Wonder Knife. Adjustable, detachable guide. 8 1/4" blade never needs sharpening.

\*\*\*Independent Living Aids, Inc.



- 3) Pie Cutting Guide. Divides 9" pie into 8 equal slices.

\*\*\*Independent Living Aids, Inc.



- 4) Slicing Guide & Roast Holder. Narrow blade knife can be inserted in grooves of aluminum holder.

\*\*\*Independent Living Aids, Inc.



F. Utensils, Tools, etc.

- 1) Oven Mitt. Flame retardent. 13" mid-forearm and 17" elbow lengths.

\*\*\*American Foundation for the Blind



- 2) Spatula, Double. Aluminum.  
\*\*\*American Foundation for the Blind
- 3) Spatula, Double. Nylon coated.  
\*\*\*Independent Living Aids, Inc.



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BOOKS/RECORDS

A Campbell Cookbook: Easy Ways to Delicious Meals, Large-Type Edition.  
Volunteers Service for the Blind  
332 South 13th Street  
Philadelphia PA 19107.

Cooking with Betty Crocker. [both in large-type and as a recording]  
Betty Crocker Kitchens  
General Mills, Inc.  
9200 Wayzata Boulevard  
Minneapolis MN 55426.

Mealtime Manual for the Aged and Handicapped.  
Simon & Schuster  
630 Fifth Avenue  
New York NY 10019.

The New York Times Large-Type Cookbook.  
Golden Press  
New York NY

Planning Kitchens for Handicapped Homemakers.  
Publications Unit  
Institute of Rehabilitation Medicine  
New York University Medical Center  
400 East 34th Street  
New York NY 10016

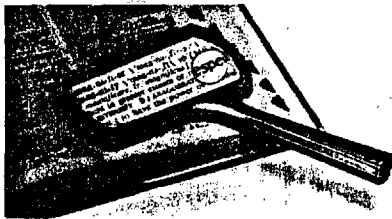
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Magnification - 1) Full-page magnifier. Thin plastic, notebook sized.

\*\*\*Independent Living Aids, Inc.



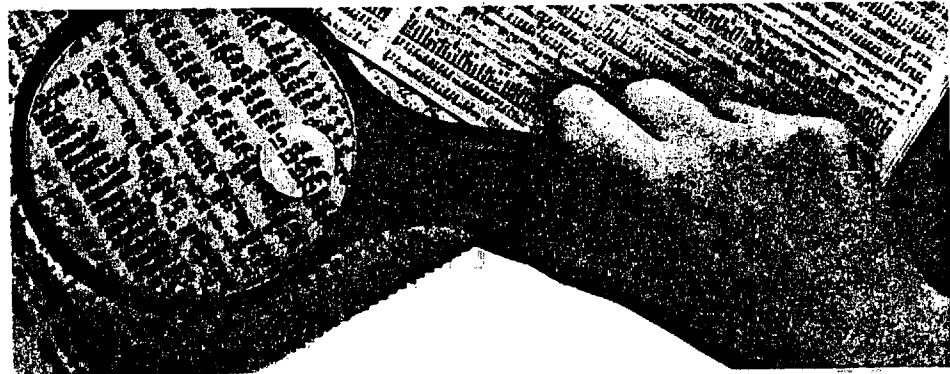
2) Hand-held magnifier with bifocal insert. 2" X 4".



\*\*\*Independent Living Aids, Inc.

3) Hand-held illuminated magnifier with bifocal insert. Uses 2 "C" batteries.

\*\*\*Independent Living Aids, Inc.



4) Hands-free, around the neck magnifier with bifocal.

\*\*\*Independent Living Aids, Inc.



- 5) Reading binoculars. Mounted in spectacle frame, inserted in lower half of plastic lenses, focused to converge at 16". Can be worn constantly.

\*\*\*William Feinbloom, O.D., Ph.D.

Safety/  
Locks

- 1) All-Purpose Burglar Alarm. Sounds a piercing alarm when magnetic field broken. Uses 9-V battery.



\*\*\*American Foundation for the Blind

- 2) Klik-Lok Padlock. Combination lock can be opened by feeling or hearing the clicks.

\*\*\*Independent Living Aids, Inc.



- 3) Safety Electric Wall Plate/ Plug Ejector. Levers aid insertion and removal of plugs without touching plate itself.

\*\*\*Independent Living Aids, Inc.

- Sewing - 1) Aluminum clothing tags. In sets of 2 each of 14 colors, identified in braille: black, blue, brown, gray, green, pink, red, tan, white, yellow, gold, orange, purple and silver. Free with order from



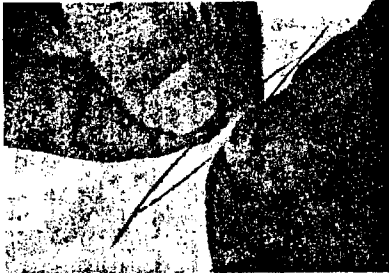
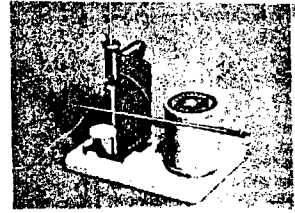
\*\*\*Independent Living Aids, Inc.

- 2) Hem clips. Indented markings.

\*\*\*Independent Living Aids, Inc.

3) Hexe Needle Threader.

\*\*\*Independent Living  
Aids, Inc.



4) Spread-Eye Needles. Split in the center for thread. Locks after needle closure with slight tug. Steel.

\*\*\*Independent Living Aids, Inc.

## HOUSEKEEPING Part II

### Atlases,

Maps - Various atlases, keys of the continents and maps and globes.

\*\*\*American Printing  
House for the Blind

### Cards,

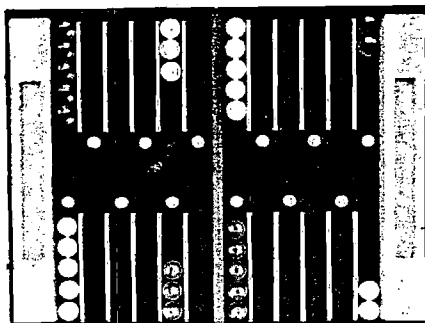
Greeting - Musical Greeting Cards. Tiny music box repetitions last for hundreds of plays. Occasions include: Birthdays, Anniversaries, Christmas, Valentine's, Mother's Day, Weddings. Also available pre-addressed and mailed.

\*\*\*Science Products for the Blind

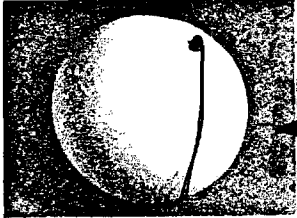


Games - Backgammon - Self-contained within carrying case. Concave red pieces; inner circle white pieces. Green/yellow board contrast for low-vision players. Braille dice. Tournament size.

\*\*\*American Foundation for the Blind



- Balls - 1) Aud-A-Ball Football; Soccerball; Volleyball. For kicking, hitting, dropping, throwing. Sound source activated by pin switch; instructions for battery replacement. Football and Soccerball have fiber wound leather casing. Volleyball for indoor use only.



\*\*\*Science for the Blind Products

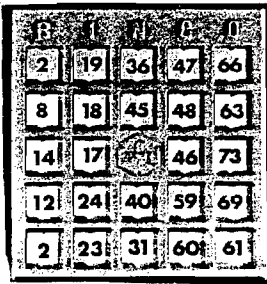
- 2) Aud-A-Nerf Ball. Spongy soft play-ball, 7" diameter. Beeps continuously. One year warranty.

\*\*\*Science for the Blind Products

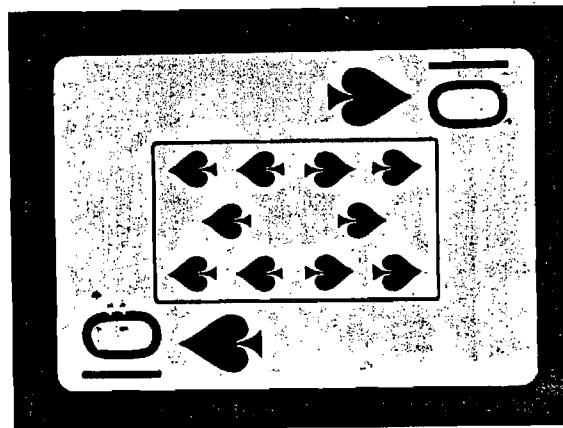
- 3) Audible Ball. Vinyl cover with stippled grip finish. Large bell.

\*\*\*American Foundation for the Blind

- Bingo - Individual player board, raised black numbers and braille symbols, differing number patterns; bingo call numbers, 1 to 75; and master bingo call board. Includes blank markers and marker pencils.



\*\*\*American Foundation for the Blind



- Cards,  
Playing - 1) Standard deck with braille. Washable. Bridge size and Pinochle size.

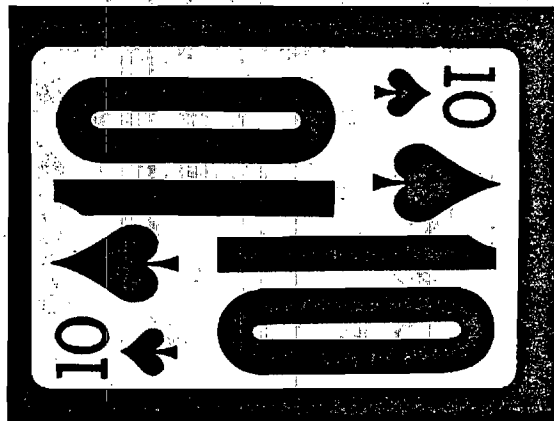
\*\*\*American Foundation for the Blind

- 2) Standard deck. Standard-size, Avon brailled. Jumbo-size, Jumbo brailled.

\*\*\*Howe Press of Perkins School for the Blind

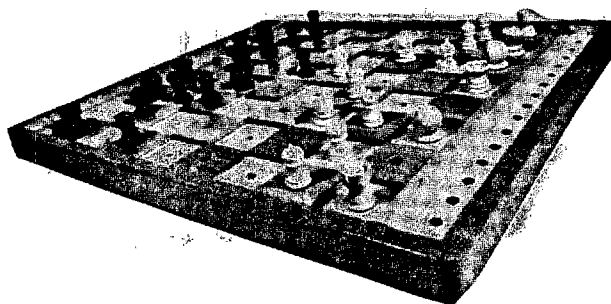
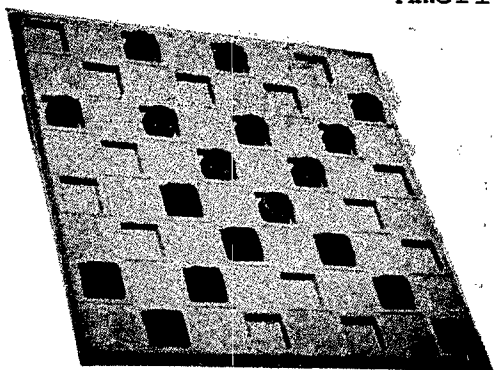
- 3) Low-Vision playing cards. Numerals and letters replace "pips" and pictures, and are color-coded. Size 2 1/2" X 3 1/2".

\*\*\*American Foundation for the Blind



Checkers - Tactually marked with sunken squares. Round black and red square checkers.

\*\*\*American Foundation for the Blind



Chess - 1) Wooden board with drilled squares for pegged chessmen. Raised black squares. White chessmen have point at top.

\*\*\*American Foundation for the Blind

- 2) Merrick chess set. Wooden board with raised black squares, drilled for pegged pieces. Comes in large and small sizes.

\*\*\*Royal National Institute for the Blind

Dice - Plastic dice with raised dots. Cup included.

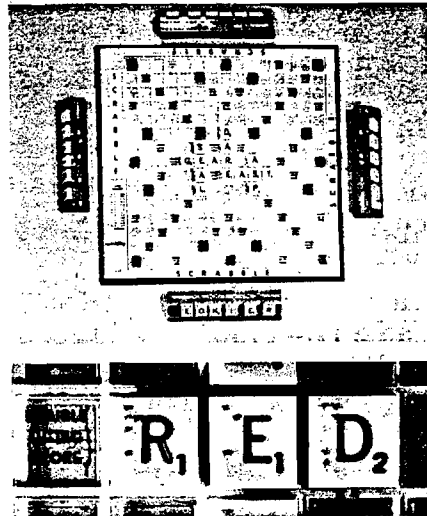
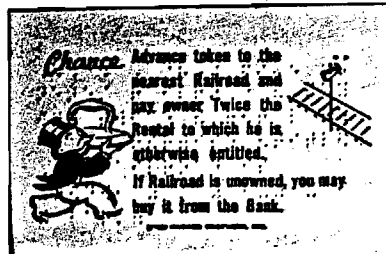
\*\*\*American Foundation for the Blind

The Game Center - Electronic Game Center plays 8 games. Synthesized speech and other audible cues. Push-button playing format.

\*\*\*Telesensory Systems, Inc.

Monopoly - Parkers Brothers game with all necessary parts brailled. Can be played with sighted persons.

\*\*\*American Foundation for the Blind

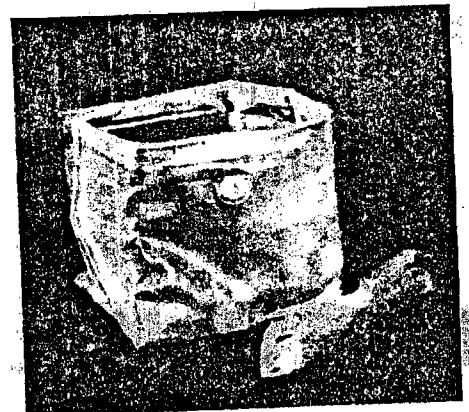


Scrabble - Deluxe Scrabble. Modified by manufacturer. Can be played with sighted persons.

\*\*\*American Foundation for the Blind

Pets - Folding Water and Food Dish for pets. Flexible plastic can be carried in pocket.

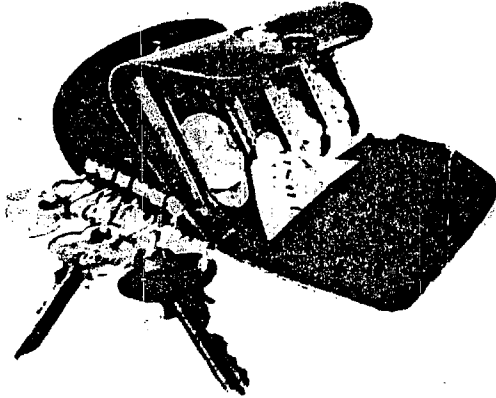
\*\*\*Science Products for the Blind





Purses - Coin Purse/Key Holder. Slots for each type change; pocket for folded money; 6-hook key holder. 2 1/2" X 3 5/8".

\*\*\*Science Products for the Blind



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#### Talking Books

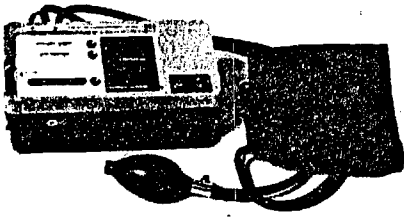
Phonograph disc reproducer, plays at 33 1/3; 16 2/3; and 8 1/3 RPM. Tone-arm placement ramp. Amplifier. Diamond needle replaceable cartridge. Available accessories include headphones and pillow speaker.

FREE from Division for the Blind and Physically Handicapped; Library of Congress

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## MEDICAL CARE

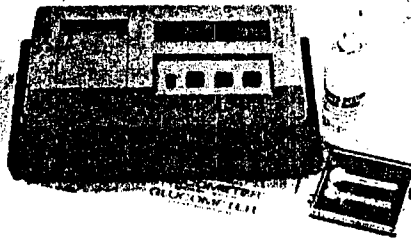
Blood Pressure - Talking Sphygmomanometer Blood Pressure Gauge. Digital and audible readouts of diastolic, systolic and pulse rates. Also beeping pulse rate. Earphone included; rechargeable battery.



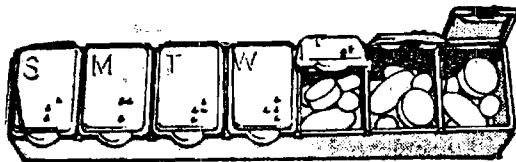
\*\*\*Science Products for the Blind

Glucometer - Talking glucometer, voice readout of digital display. Requires blood sample, supervision and/or training in procedure.

\*\*\*Science Products for the Blind



Pill Organizer - Seven compartments within plastic container. Each marked in braille and standard alphabet for each day of the week.



\*\*\*American Foundation for the Blind

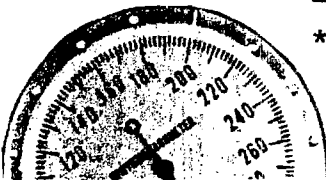
Scale - Talking scale.

\*\*\*Science Products for the Blind

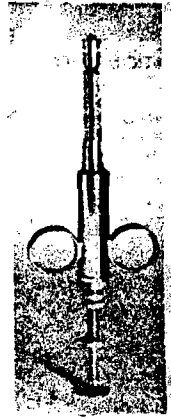


Stethoscope - Bent needle stops at each 20 mm of pressure. Lens cover, pouch, instructions included.

\*\*\*American Foundation for the Blind



Syringes - Insulin syringe. 100-Unit scale. Adjustable positive stop, automatically draws correct amount of solution into syringe. Can be sterilized without disturbing stop. Adjustment must be set by physician or nurse. CAN BE SENT ONLY TO SAME.  
\*\*\*Science Products for the Blind



Syringe  
Devices

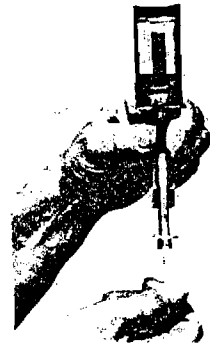
- 1) Andros IDM Insulin Dosage Monitor. For use only with Decton-Dickinson's #8409 Plastipak U-100 disposable syringes. SOLD ONLY TO PHYSICIANS OR OTHER REGISTERED HEALTH PROFESSIONALS.



\*\*\*Science Products for the Blind



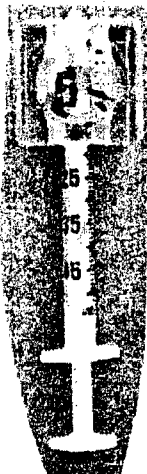
- 2) "Holdease" Needle Guide & Syringe/Vial Holder. Works with all 1 cc.; 1/2 cc. U-100 disposable syringes; Meditec "insulgage" guides; and U-40 long-type disposables. No sterilization needed; not for glass syringes or short-type disposables.



\*\*\*American Foundation for the Blind

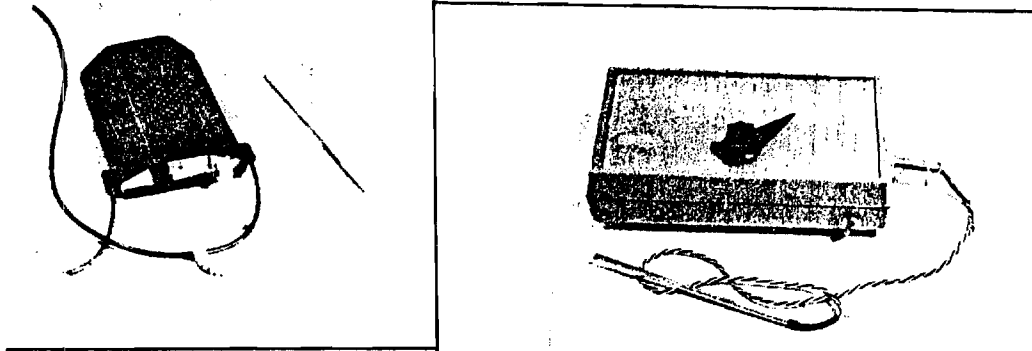
- 3) Monoject Syringe Magnifier. Clips onto syringe in area of dosage measurement. Fits any plastic, disposable syringe.

\*\*\*Division of Sherwood Medical



Thermometer - 1) Aud-A-Mometer. Talking. Comes in Clinical Fahrenheit; Clinical Celsius; Laboratory Celsius; Darkroom Fahrenheit; and Weather Fahrenheit models. Stainless steel probe.

\*\*\*Science Products for the Blind

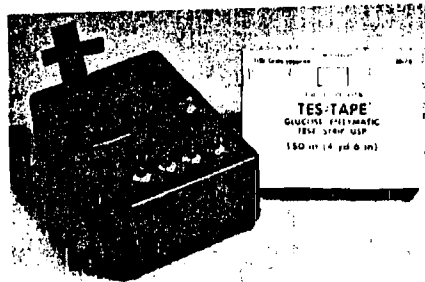


2) Thermovoice Talking Thermometer. Alternate probes for use as clinical thermometer, indoor or outdoor temperature measurement, or cooking thermometer. Fahrenheit scale.

\*\*\*American Foundation for the Blind

Uricator - Indicates blood sugar for diabetics. Battery-operated.

\*\*\*Science Products for the Blind



## NAVIGATION

Beacons - 1) Cricket Direction-Locator. Emits high-pitched beep. Uses 9-V battery, weighs less than one lb. DIRECTIONS ON MANUFACTURE.

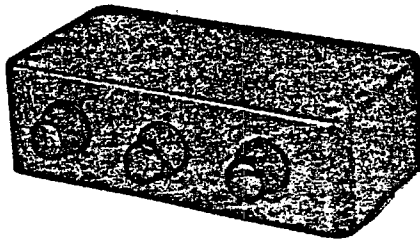
\*\*\*Medical Engineering Club  
Western Electric Company, Inc.

2) Sound Beacon for stationary location. Clicks; waterproof; drip guard.

\*\*\*De Blindas Forenings Forsaljningsaktiebolag

3) Sound Beacon. Transportable. Volume, pitch and rate of bursts can be adjusted. Battery-operated. DIRECTIONS ON MANUFACTURE.

\*\*\*Rehabilitation Engineering Center  
Smith-Kettlewell Institute



## Canes

1) Fiberglass cane. Lightweight, crook handle. Rubber golf grip, replaceable nylon tip. Lengths 34" to 54".

\*\*\*American  
Foundation for  
the Blind

2) NFB Fiberglass cane. Lightweight, durable. Sizes 49" to 63".

\*\*\*National Federation of the Blind

3)

Mahler Heavy-Duty Aluminum Folding Cane. Stands heavy compression. Rubber golf grip, flexible wrist loop. Can jam; replacement of some parts difficult. Lengths 38" to 53".

\*\*\*American Foundation for the Blind

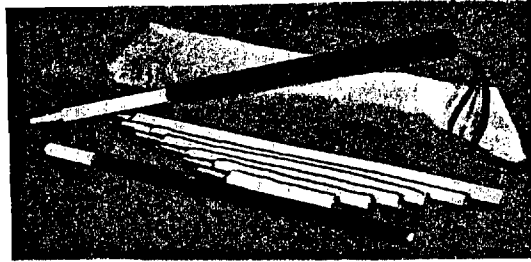
4) Rigid-Fold Cane. Hard-anodized, 4 sections.

\*\*\*Rigid Fold



- 5) W.C.I.B. Heavy-Duty Folding Cane. Aluminum, 4 sections Gold grip, flexible wrist loop. Push-on nylon tip, precision joints.

\*\*\*W.C.I.B.



Reflective

Badges

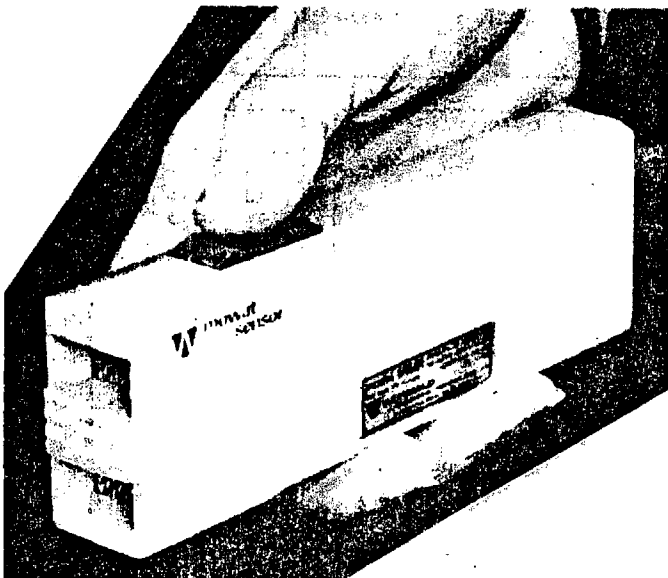
- Reflective Bus/Taxi Badge. Smooth bus side; raised letters on taxi side. Bottom of badge opens for hand or cane insertion; button on top. Visible from over 600 ft.



\*\*\*American Foundation for the Blind

- Sensors - 1) Mowat Sensor. Hand-held unit vibrates when object is detected, one to 4 meters away. Range setting controls, battery operated. To be used in conjunction with dog or cane.

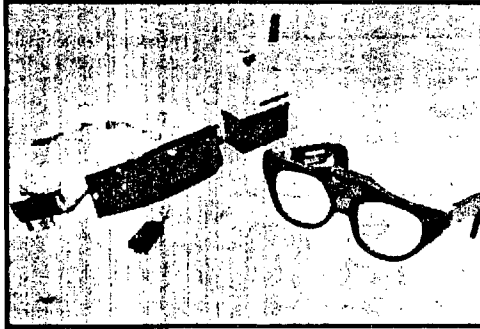
\*\*\*Wormald International Sensory Aids, Ltd.



Sensors - 2)  
continued

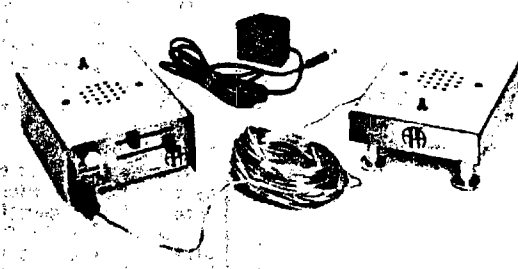
Sonicguide. Sensors built into spectacle frame. Transmitter radiates ultrasound, which is reflected by object and translated back as sound, pitch varying with the distance of the object. Small control box for electronics. Warranty.

\*\*\*Wormald International Sensory Aids, Ltd.



- 3) Soniguide. Master unit, speaker and power. Pulse-rate controls. Used in tracking; localizing and responding to sound; balance and posture; arm positioning; and cane travel. Warranty.

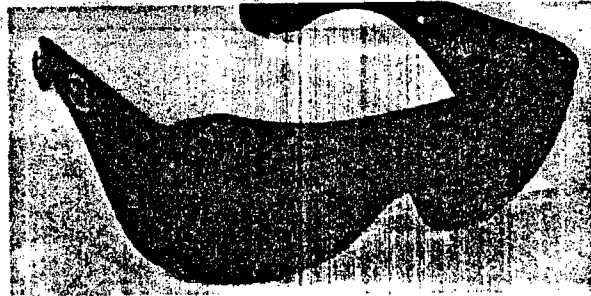
\*\*\*American Printing House for the Blind



Spectacles - 1) Field-Expander Driving Spectacles for Tunnel Vision. For patients with acuity of 20/50 or better in one eye. Fitted only at NIRE or NIRE optometrists or ophthalmologists. Driver training provided also.

\*\*\*The National Institute for Rehabilitation Engineering

2) Noir Sunglasses. Controls light in ultraviolet, visible and near infrared areas. Transmission-range models from 1% to 18%.



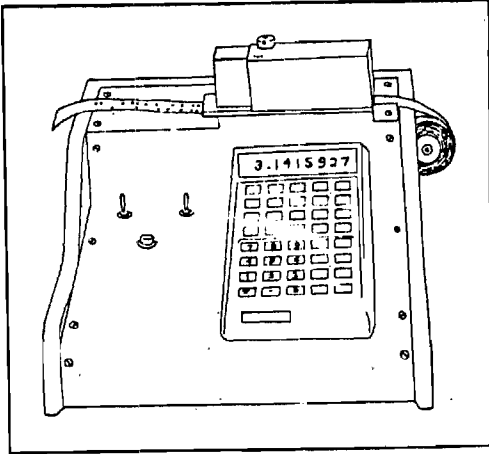
\*\*\*Independent Living Aids, Inc.



## TOOLS

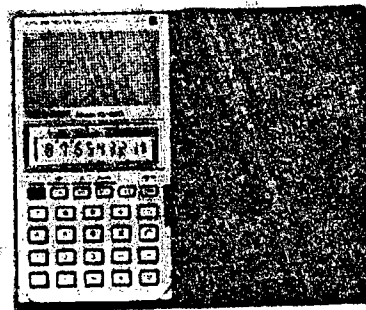
Calculators - 1) Calcu-Tac. Calculator produces braille print-out. Calcu-Tac 97 also prints print.

### \*\*\*Science for the Blind Products

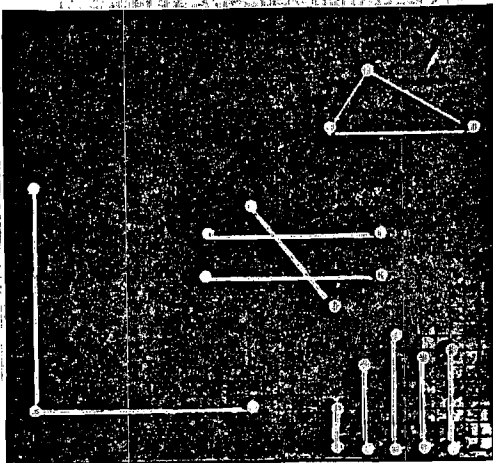


- 2) Classroom Talking Calculator with Earphone. For situations where auditory output is undesirable. (\$75.00)

\*\*\*Sharp



- 3) Graphic Aid for Mathematics. Cork, board, wires, pushpins and rubber bands form geometrical and other mathematic figures necessary for study of arithmetic to calculus.



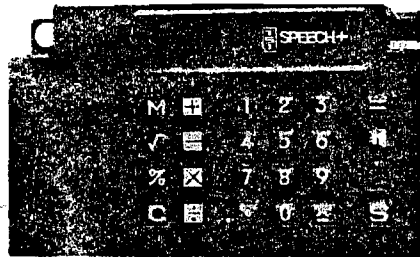
\*\*\*American Printing House for the Blind

- 4) Professional Voice Calculator. Voice synthesizer reads out entries and recalls in sequential order. Print output.

\*\*\*Canon



- 5) Speech Plus Calculator. Six basic functions; repeat Speech key; 24-word vocabulary. Ear-phones; lightweight. Designed specifically for blind users.



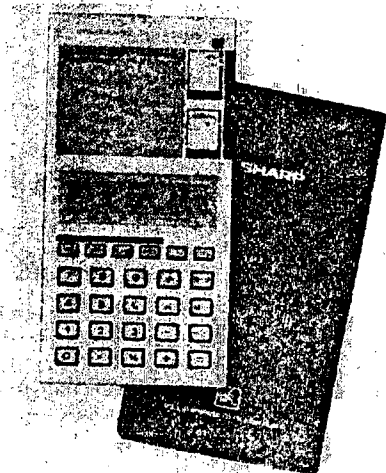
\*\*\*American Foundation  
for the Blind

- 6) Tactual Display. Fits most devices with LED display. Figures are read by fingertip translation metal touch-points; 12 digit capacity.

\*\*\*Projeckt AB ALEA

- 7) Talking Calculator. Pocket-sized. Reads out in whole numbers or digit by digit.

\*\*\*Sharp



- 8) Talking Clock/Calculator. Slightly bulkier than regular portable calculator.

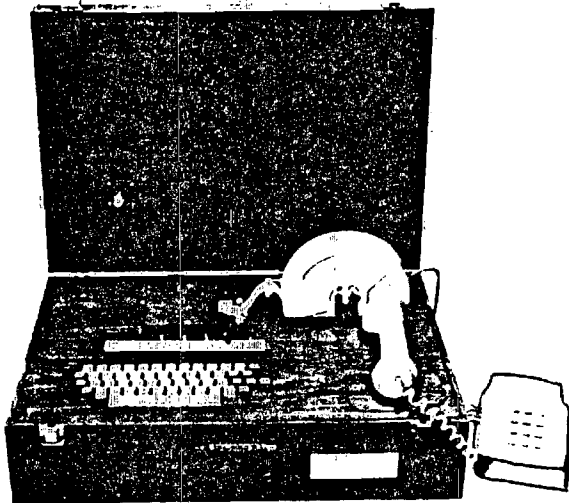
\*\*\*Sharp

Computers - 1) Braille Terminal. Asynchronous, serial character embossing device; 10 characters/s speed, 26 alphabets, 10 numerics, other symbols. Standard braille dot dimensions. EIA, TTY interfaces modes. Keyboard and acoustical coupler built in.

\*\*\*Triformation Systems, Inc.

- 2) Embosser Model ISE-1: the Interactive Strip Embosser. Braille computer terminal. 10 characters/s speed; uses strip paper tape. Uses other data sources such as cassettes; equipment and training options.

\*\*\*Triformation Systems, Inc.



2	3	4	5	6	7	8	9
E	F	G	H	I	J	K	L
S	T	U	V	W	X	Y	Z
f	g	h	i	j	k	l	m
t	u	v	w	x	y	z	
@	#	\$	%	↑	↓	*	<

- 3) Large Letter Computer Print-Out. "Printronic" dot matrix printer. Letter size can be changed by modifying program. Uses almost any available computer.

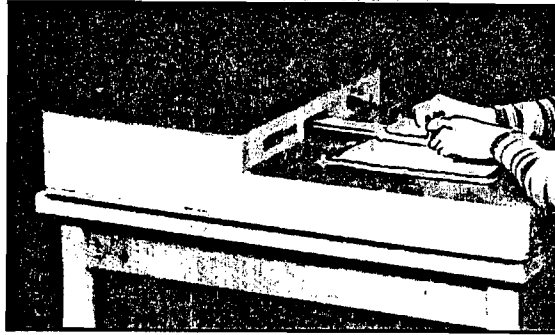
\*\*\*Printronic, Inc.

- 4) Optacon. Scanning/translation to braille. See BRAILLE page 2.

\*\*\*Telesensory Systems, Inc.

- 5) Sensory Quill. Stylus produces raised image wherever touches paper or plastic. For both drawing and reading maps, graphics, etc. Comes in both institutional models and personal models.

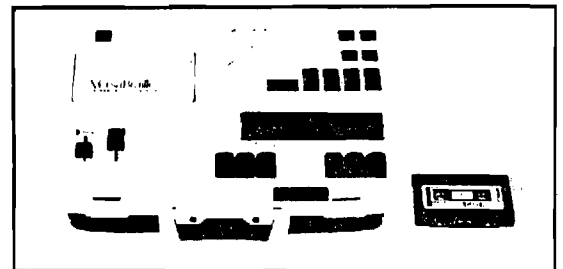
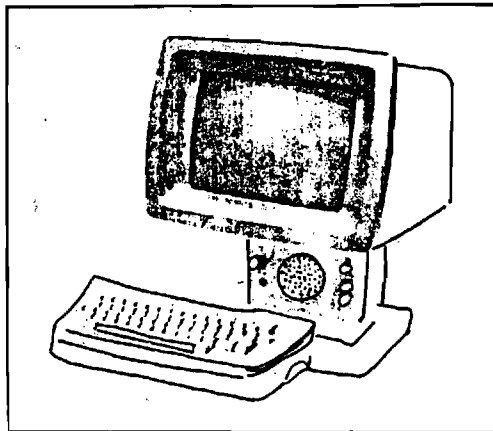
\*\*\*Traylor Enterprises, Inc.



- 6) Total Talk Full Speech Computer Terminal. Unlimited vocabulary; inflected voice. Speaks information as it is sent or received or by cursor location. Uses Hewlett-Packard 2621A Interactive Terminal. Speech synthesizer, CRT screen and control knobs in one unit. Cable-attached keyboard. Earphone jack.



\*\*\*Maryland Computer Services

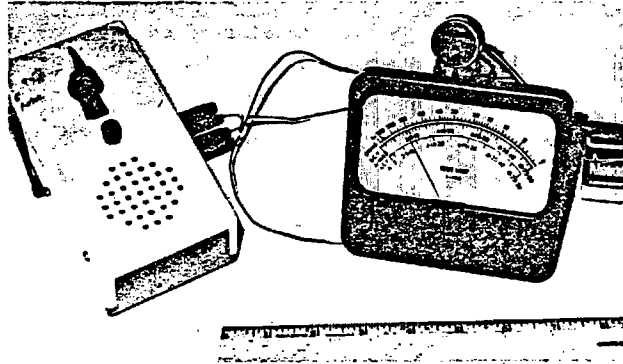


- 7) Versabraille System. Records braille on cassette tape and displays braille on 20 character line. Audio tape recorder for recording braille and sound on same tape; automatic indexing and retrieval system. Options.

\*\*\*Telesensory Systems, Inc.

- Hand Tools - 1) Audible Meter Reader. To be connected to any type of pointer-meter device. Self-contained; terminal wires on back.
- DIRECTIONS ON MANUFACTURE.

\*\*\*Rehabilitation Engineering Center  
Smith-Kettlewell Institute

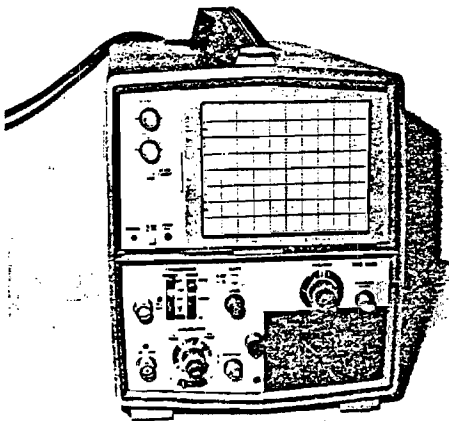


- 2) Audicator Multi-Purpose Sensor. Light sensor; clip leads for checking electrical functions; liquid level probes. Uses 9-V battery.

\*\*\* Science for the Blind

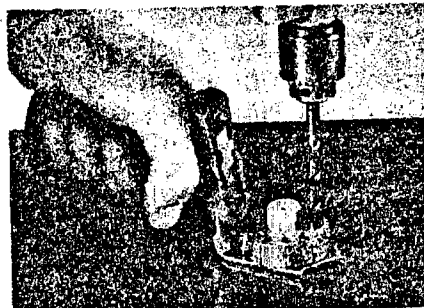
- 3) Auditory Oscilloscope. Gives frequency, amplitude and temporal information. Circuitry can be internal or attached externally.
- DIRECTIONS ON MANUFACTURE.

\*\*\*Rehabilitation Engineering Center  
Smith-Kettlewell Institute



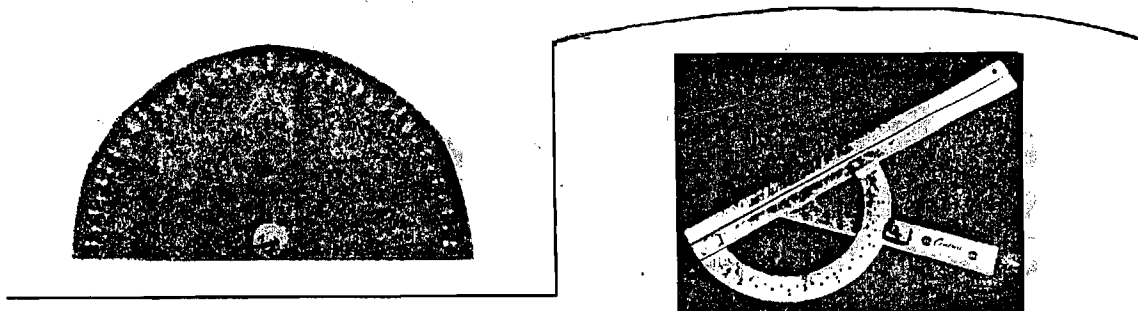
- 4) Drill Guide. For use on wood, metal or plastic. 13 set positions; sizes from 1/16" to 1/4". Non-slip base.

\*\*\*Stanley



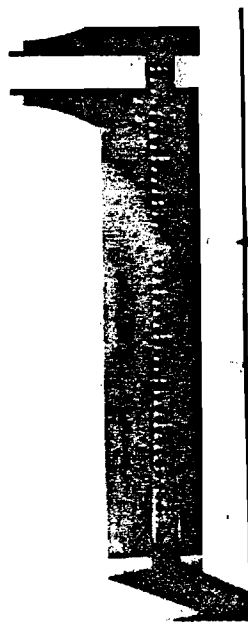
- 5) Protractor. Raised dots at each  $5^{\circ}$ , double raised dots at each  $10^{\circ}$  and three dots at  $45^{\circ}$ ,  $90^{\circ}$  and  $135^{\circ}$ . 3" radius; 6 1/2" pointer.

\*\*\*American Foundation for the Blind

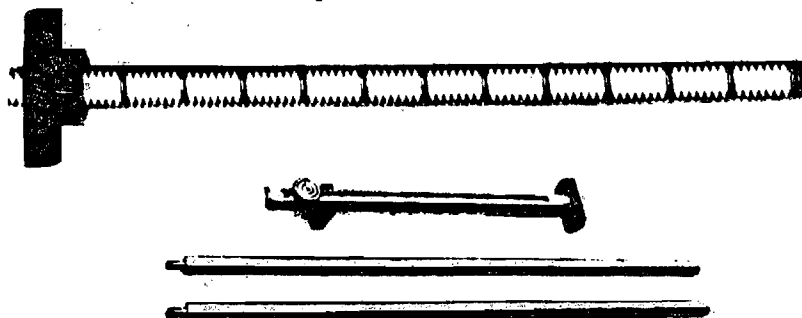


- 6) Protractor and Saw Guide. Ribets serve as single raised dots, with double raised dots at  $30^{\circ}$  and  $60^{\circ}$ , and three dots at  $0^{\circ}$ . Slightly depressed lines. Steel arm 18" long; protractor 9 1/2".

\*\*\*American Foundation for the Blind



- 7) Rule. Caliper rule. Single raised dots every 1/8"; double dots at 1/2" mark and three at 1" both inside and outside of sliding jaw. Stationary jaw has double raised dot measurements on inside and outside. \*\*\*Stanley [Science Products for the Blind]



- 8) Rule. Rotomatic and Telescopic Click rules. Aluminum. Rotomatic Rules has tactile marking every 1/2" on one side; Telescopic also clicks at each 1/16".

\*\*\*American Foundation for the Blind

- 9) Rulers. Plastic, wood, steel, aluminum or brass. Raised lines or dots or slots or notches to indicate measurement.

\*\*\*American Foundation for the Blind

- 10) Rulers. Metric/English-measurement ruler: one and 1/2 centimeter markings; black plastic. English-measurement ruler: black plastic. Glue-Down Rule: brass for epoxy bonding to cutting boards, sewing machines, etc.

\*\*\*American Printing House for the Blind



- 11) Saw Guide. Fixed element has raised dots on left and right sides; markings at 45°, 90° and 45°. Moving element has single reference dot. Can be set any 15° point between the 45°s and 90°.

\*\*\*Stanley



- 12) Screw Starter. Handled screddriver blade with screw slot, then screw, gripping center. Withstands 15 lb. pull. 6" blade.

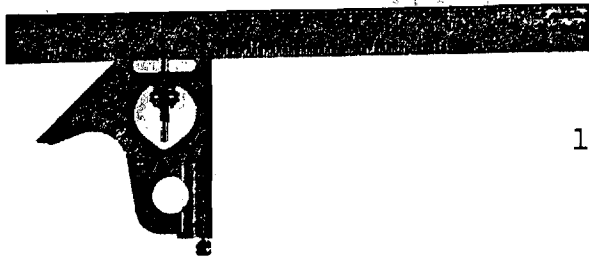
\*\*\*American Foundation for the Blind

- 13) Speed Soldering Iron. Heats in 10 seconds; cools so quickly that work can be fashioned by touch while iron is cold. Nickled wire soldering element. For use on AC only.

\*\*\*American Foundation for the Blind

- 14) Square. Combines removeable rule, outside tri-square, inside tri-square, mitre square, depth gauge and marking guage. Single raised dots every 1/8"; double at 1/2"; and three dots at every 1". Scriber kept in bottom of handle.

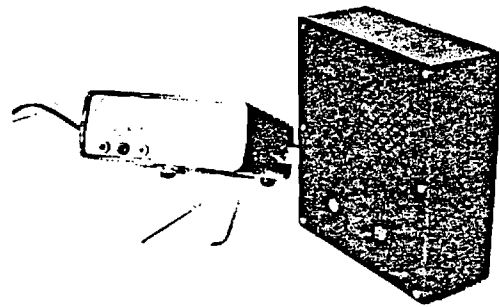
\*\*\*American Foundation for the Blind



- 15) Talking Meter.  
Provides speech output for any digital multimeter with Intersil ICL 7107 component.

INSTRUCTIONS  
ON MANUFACTURE.

\*\*\*Rehabilitation  
Engineering Center,  
Smith-Kettlewell  
Institute



- 16) Tire gauge. Standard gauge modified with notches on project pressure rod.

\*\*\*Science for the Blind



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Directions For:

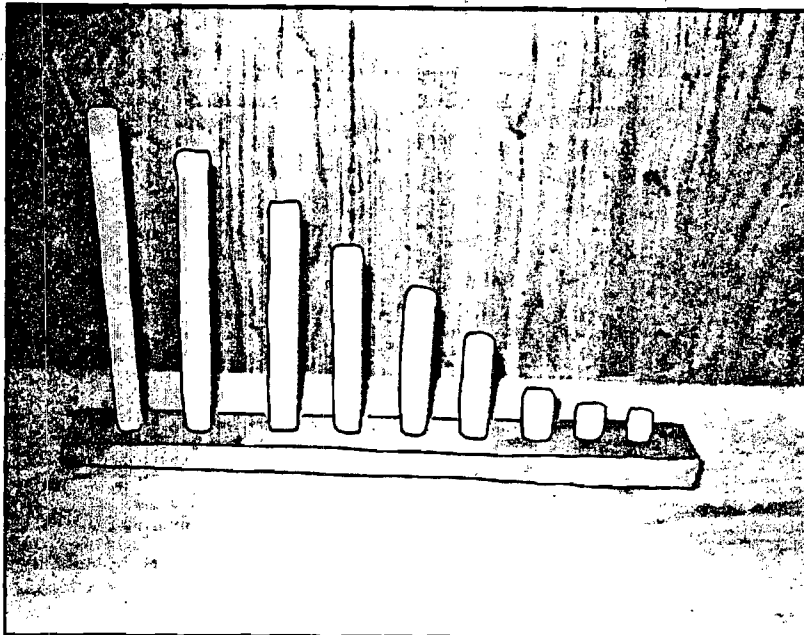
Aligning a Handsaw: A carpenter's square is set atop the wood to be cut, and used to position the saw and guide a straight cut.

Information provided by R.A. Weisgerber, American Institutes for Research in the Behavioral Sciences.



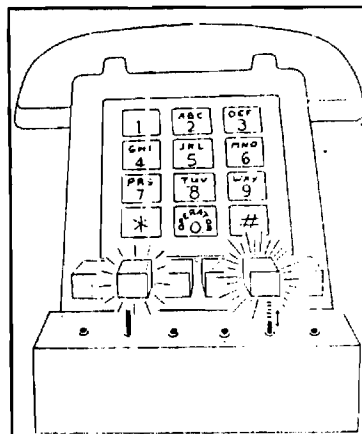
Making a Table Saw Guide: Device shown was made of plastic water pipe, cut in different lengths from 1/2" to 8", and grooved for inch measurements with a 3-sided file. To be used to measure length or width.

Information provided by William Peters, Sterling IL, and contact person Russ Gage, Milwaukee WI.



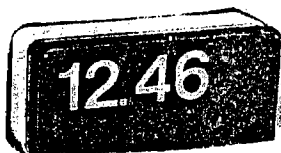
Telephones - Tele-Tac. Reads lights on multi-line telephones. Raised pin signals busy line; bouncing pin signals hold; rising and falling pin indicates ringing line.

\*\*\*Science for the Blind Products



Watches,  
Clocks - A. Clocks

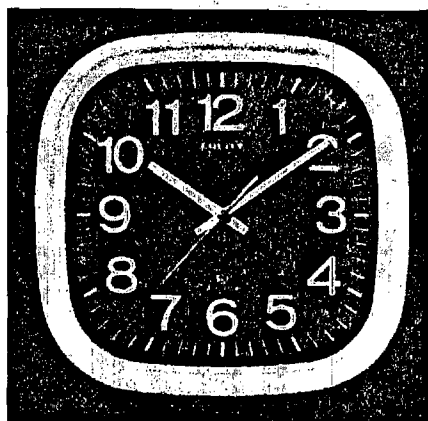
- 1) Low Vision Copal Digital Clock. 2" high numbers, white on black. Uses one D.C. 1.5 V battery. Green 'on' light. Time set by turning knob.



\*\*\*Independent Living Aids, Inc.

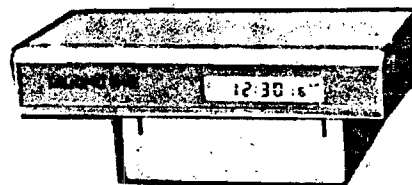
- 2) Low Vision Wall Clock. Quartz. One and 1/4" numbers, white on black.

\*\*\*Independent Living Aids, Inc.

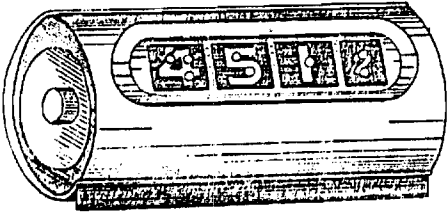


- 3) Talking Time. Pocket-sized, with alarm, timer and stopwatch. Melody alarm; speech output for time every hour or half-hour.

\*\*\*American Foundation for the Blind



- 4) Tick-Tac Digital Clock, and Alarm Clock model. Also comes with 10-minute buzzer.



\*\*\*Science Products for the Blind

- 5) Travel Alarm Clock. White with 3 raised dots at 12:00; double dots and single dot markings.



\*\*\*American Foundation for the Blind

## B. Watches

- 1) Men's Quartz Electric Wrist Watch. Swiss-made; battery replacement once a year by jeweler. Gold hands and gold electroplated case; genuine brown lizard strap.



\*\*\*American Foundation for the Blind

- 2) Women's Deluxe Classic Watch. Manual-wound. 17-jewel; shock-resistant. Gold electroplated expansion band.

\*\*\*American Foundation for the Blind



A Catalog of Commonly-Used Products for Deaf Persons or  
Those with Hearing Impairments

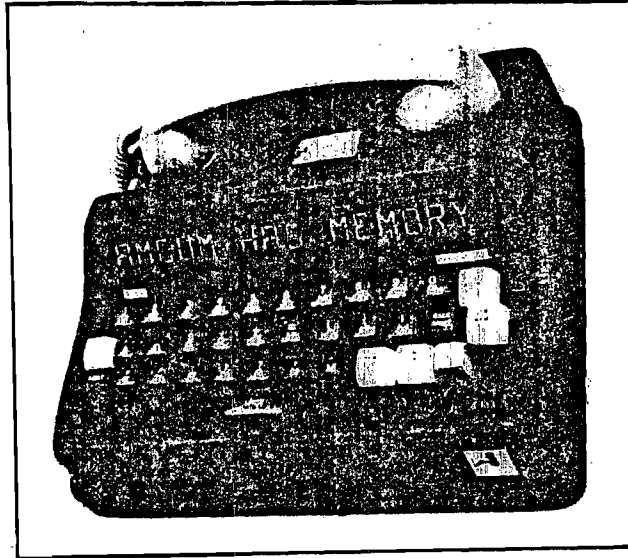
I N D E X

I.	<u>Communications</u> .....	1-7
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## COMMUNICATIONS

Am-Com I (TTY) - Compatible with pay phones, automatic phone answering equipment, etc. 900-character built-in memory; unlimited memory with supplementary tape recorder. Automatic TTY emergency messages for police (key 1), fire (key 2) and ambulance (key 3). Battery-operated.

\*\*\*American Communication Corporation

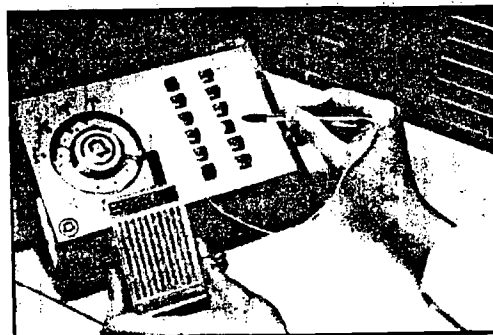


Ampli-Sound - Transmitter broadcasts over little-used FM frequencies (no FCC licence necessary). Enables hearing-impaired persons to pick up sermons, movie soundtracks, etc., on AM pocket radio and headphones.

\*\*\*Ampli-Sound

Bejed Pioneer Sound Probe -

Portable unit plugs into telephone receiver. Sound probe lamp flashes once for yes; two for no-no. Phone receiver can also be tapped for flashes response. Person using microphone must be able to speak.



\*\*\*Oregon Chapter #31, Telephone Pioneers of America

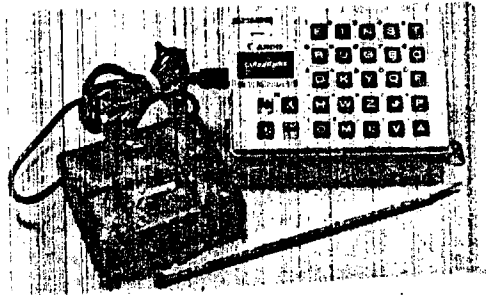
Bodai Patient Communicator -

Whole word or by-letter talk line. 96-character memory. Can transmit and receive between units. Battery or line powered. Spanish to English translation with keyboard overlay.

\*\*\*Sonteck Medical, Inc.



Cannon Communicator - For persons with reduced oral and/or motor skills. Requires motor control and spelling ability. 7-hour battery pack charge. Lightweight.



\*Telesensory Systems, Inc.

Infrared Listening System - Amplification device. Transmitter sends infrared light containing audio signals for headset or hearing aid adapter. Home use and public address systems available.

\*\*\*Sound Associates

Light Signal Devices for the Hearing Impaired -

Room system KE Notifier Series. Sensitive control (jack for phone pickup) for baby cry sound pickup; door bell pickup; heat sensor fire alarm; etc., attached to room's power cord.

\*\*\*Devices for the Hearing Impaired

Lightwriter - Portable keyboard with newsstrip. Typewriter layout; removeable display.

\*\*\*Toby Churchill, Ltd.

Manual Communications Module - 32-character display; backspace, clear and shift keys. Automatic line control. Power supply indicator; battery and AC operated. Compatible with TTY.

\*\*\*SSI of Georgia



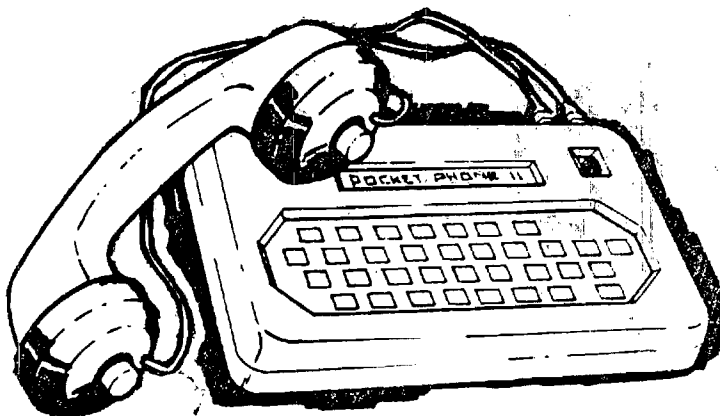
Manual Communications Module/Printer -

Full-size printer. 60 WPM, 48-character line capacity.

\*\*\*SSI of Georgia

Pocket Phone II - Battery powered. Standard typewriter keyboard. Portable. Compatible with all TTYs and TTDs.

\*\*\*C-Phone, Inc.

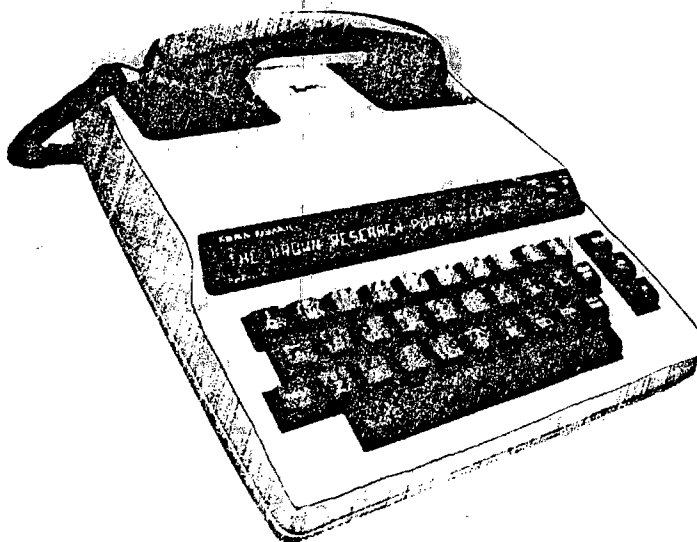


Porta-Tel - TDD/TTY compatible. Portable; uses house current, rechargeable or alkaline batteries. Optional carrying case. Company will finance.

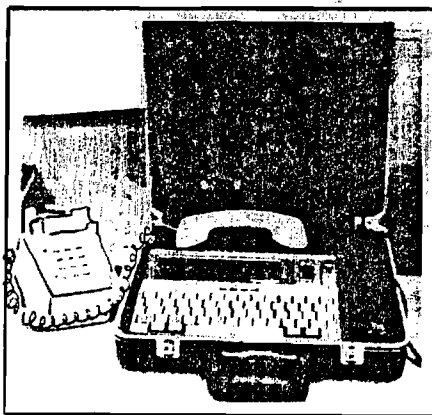
\*\*\*Sound Barrier, Inc.

Porta View 32 - Lightweight. AC or battery-operated. Backspace key for errors.

\*\*\*Krown Research, Inc.



Sony Typecorder - Synthesized speech for phone-usage and lecturing. 40-character keyboard with correct, add and delete keys. Steno key vocabulary. Stores one page for transmission; 120 pages can be saved on cassette. Battery-operated; in attache case.

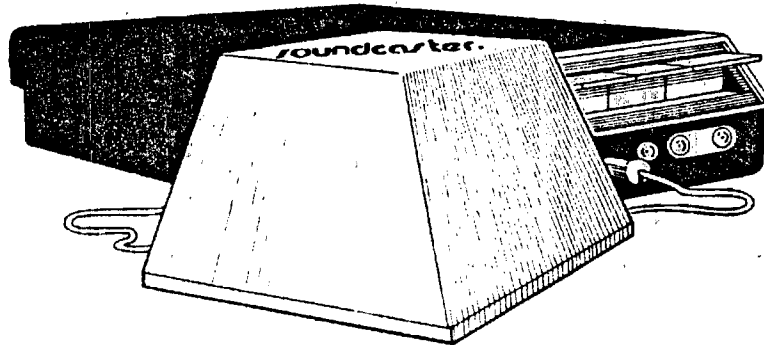


\*\*\*Rehabilitation Engineering Center, Children's Hospital at Stanford



Soundcaster - AM radio broadcaster for cassette recordings. Also converts FM through car or home speakers, and amplifiers TV sound.

\*\*\*Soundcasters



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Superphone -



Typewriter keyboard; 1000 character memory. Telephone ring signaller. Emergency batteries. Printer, carrying case optional. TDD/TTY usage.

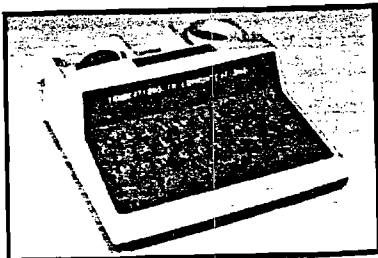
\*\*\*Ultratec, Inc.

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Superphone - Baudot 5-level and ASCII 8-level codes; 1024-character memory. Emergency batteries. Full-size keyboard.

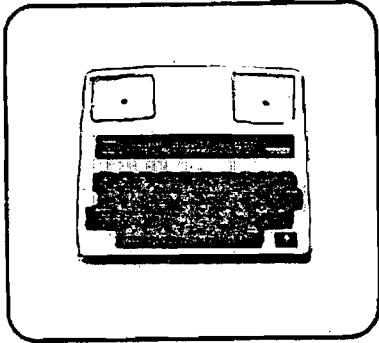
\*\*\*Applied Communications Corporation

System 100 Communicator - Lightweight "teletype." No wiring required. Simultaneous transmission of typed words. Printer for hard copy and pre-storage of messages.



\*\*\*SSI of Georgia

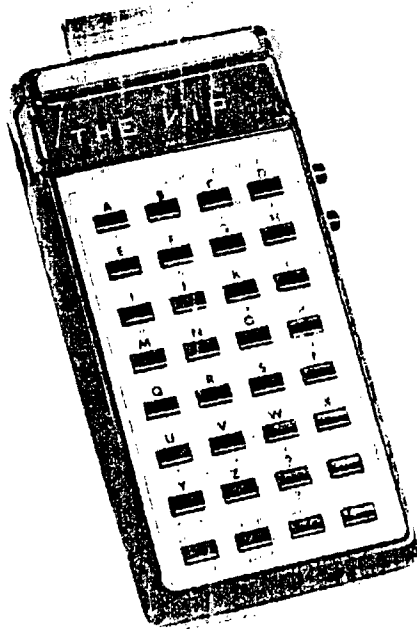
Ultratec Minicom TDD - Full-size 35-key keyboard; 20-character display. Signal light for dial tone, busy and ringing. AC or battery operated. Carrying case optional.



\*\*\*Weitbrecht Communications, Inc.

Vibrating Pager - Strong vibration warning from pager which is clipped to belt or clothing.

\*\*\*Motorola Radio, Inc.



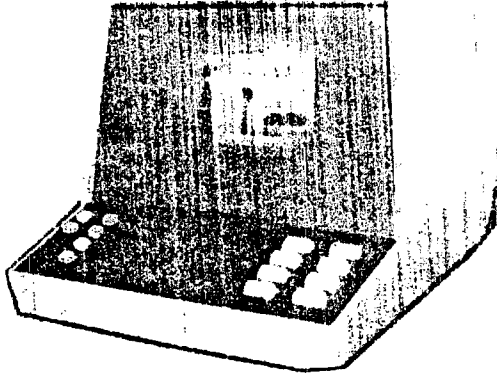
VIP Communicator -

Line-feed for printing TTYS; automatic carriage return; backspace key; signal light; and clear key. Repeat emergency key. Optional Talking Pocket clip-on newssline repeating words typed on VIP. Battery or AC operated.

\*\*\*Automated Data Systems, Inc.

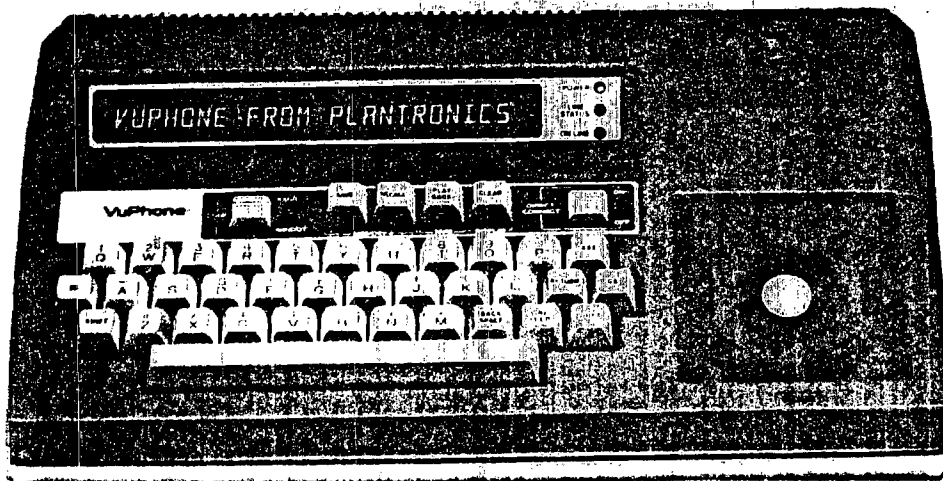
Vis-I-Con - Interactive media-based micro-processor and screen system. Programmable memory for instruction control. Uses super-8 film cassettes. Can stand alone, or function as computer terminal or host system.

\*\*\*Learning Technology Institute



Vu-Phone TDD - Full-size standard keyboard; 32-character display. Portable; battery or power operated. 700-character memory, more with tape recorder.

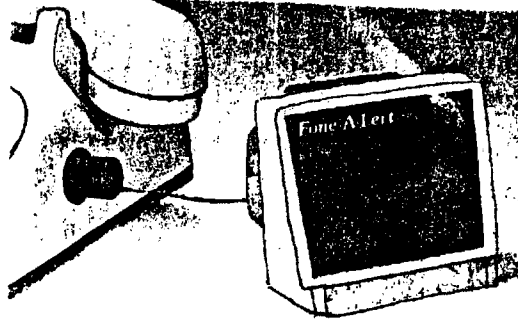
\*\*\*Plantronics



## PHONE AIDS

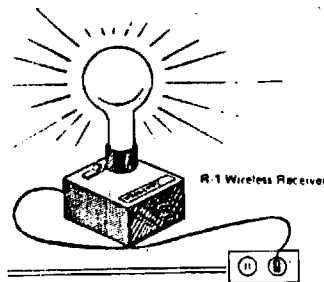
Fone-A-Lert - Wire for 4" sensor box attaches to phone with suction cup. Can use more than 250' of wire to rooms in house, yard, etc. Comes with 40' of wire.

\*\*\*Joan Cook



M-2 Coupler - Hard-wired to telephone lines. Usable with any kind of telephone, world-wide. Built-in signaller. Communication style keyboard.

\*\*\*Phone-TTY, Inc.



Nuvox Telephone Amplifier - Attaches to receiver. Amplifies; built-in adjustable volume control. Portable. Will not work on General or Trim Line phones.

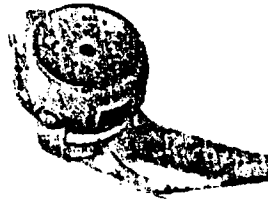
\*\*\*Hal-Hen

Nuvox Telephone Coupler - Must be used with a hearing aid. Creates inductive field for hearing aid telecoil.

\*\*\*Hal-Hen

Phone Aid - Volume control for amplifier. Portable. Uses AA battery.

\*\*\*Joan Cook



Talking Telephone Directory - Desk top computer with keyboard, speech box with connecting cables, visual display and printer. Responds vocally and visually with information when name is typed.

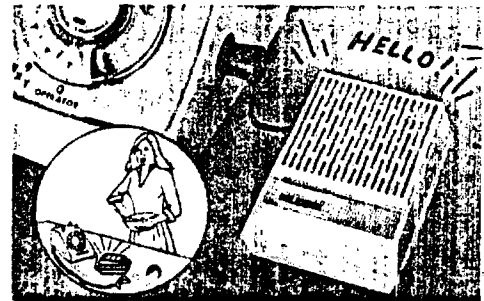
\*\*\*Maryland Computer Services

Telenote - Voice graphic communication system. Written information is transmitted to one or many receiving points. Oral relay also possible.

\*\*\*Talos Systems, Inc.

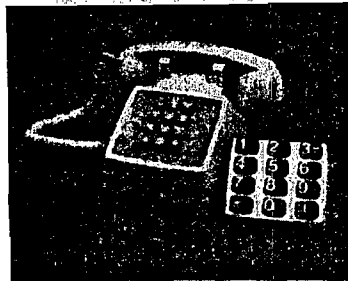
Telephone Amplifier - Loudspeaker broadcasts phone messages; no hands required. Suction attachment. 3' cord. Uses 9-V battery. Box roughly 2" X 4".

\*\*\*Walter Drake

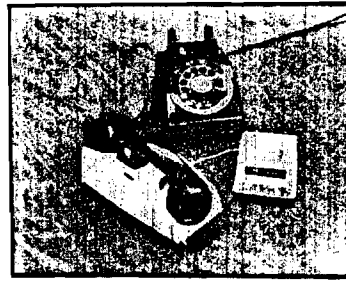


Telephone Attachments - Telephone Amplifier increases both incoming and outgoing voices. Volume adjustment on hand set cradle. Phone Holder Hand Clip wraps around phone hand set. Touchables fit over standard phone keyboard. Oversized numbers; large buttons.

\*\*\*Maddak, Inc.



Touchables™



The Telephone Amplifier

Telephone Signallers - Alarm-Alert

SEE SECURITY  
SIGNALLERS

Flashing Systems, Inc.

KE Series

Multi-Purpose Signaler System

Sonic Alert

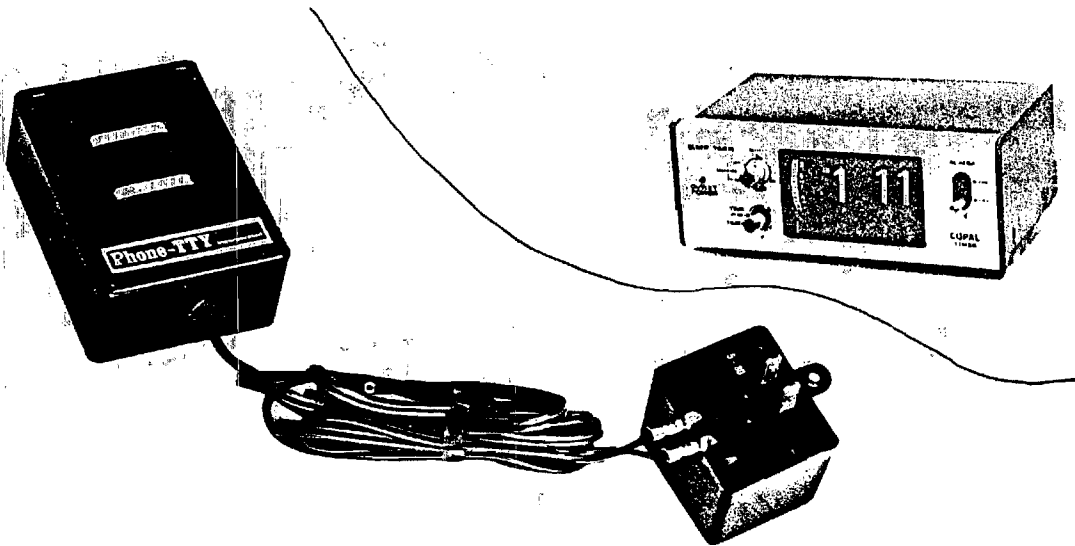
Sound Lamp & Super Sound Lamp

SECURITY

A. CLOCKS

- 1) Auto-Digital Vibrating Alarm Clock Kit. Digital clock and heavy-duty bed vibrator.

\*\*\*Hal-Hen

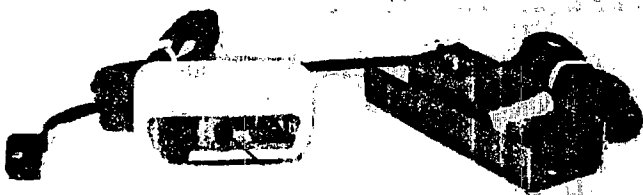


- 2) Bed Vibrator. Low voltage. Use with alarm clock, baby cry or telephone signaller.

\*\*\*Phone-TTY, Inc.

- 3) Bed Vibrator with Variable Speed Control. Mounts under bed frame or on headboard. Red 'on' light. Plugs into "Moonbeam" clocks. Can be used as massage.

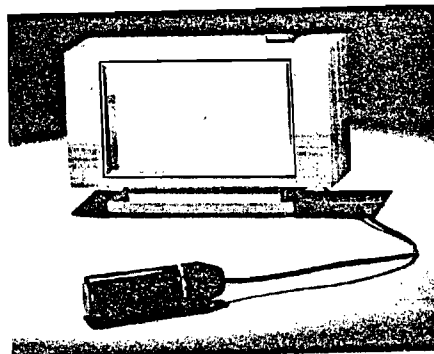
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- 4) Electro Alarm Clock Kit.

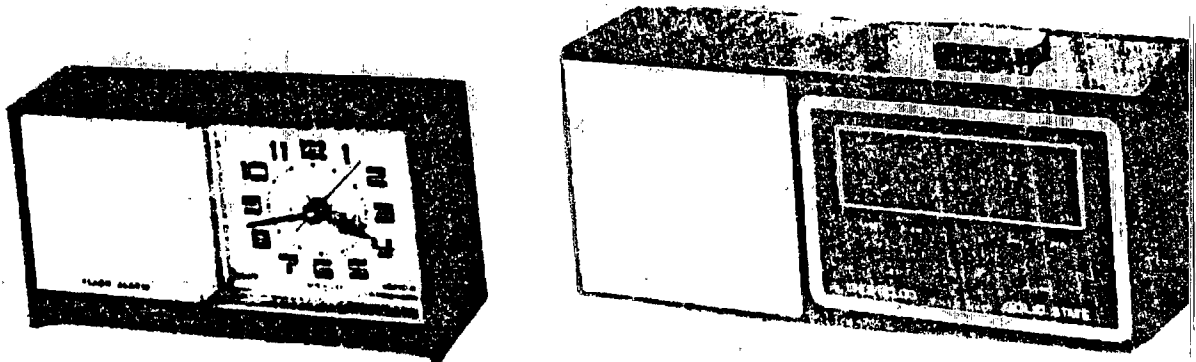
Portable; uses single C-type cell battery. Detachable pillow vibrator.

\*\*\*Hal-Hen



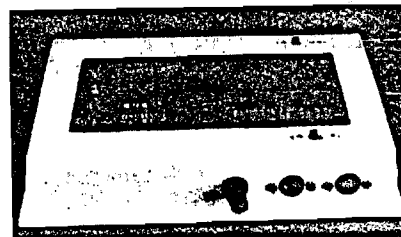
- 4) Moonbeam Clocks. Soft flashing light panel. Buzzer alarm follows. Built-in receptacle at back of clock. Comes in dial face; dial face with top switch; and digital models.

\*\*\*SSI of Georgia



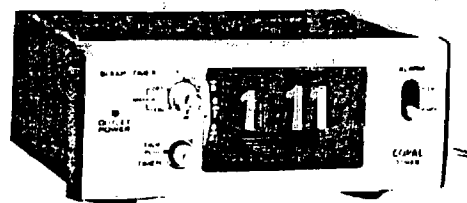
- 5) Portable Wake Alarm Kit. For use with any type alarm clock. Control Center, connecting cable and pillow vibrator. Uses two standard D-cell batteries.

\*\*\*Hal-Hen



- 6) Wake Up Clock. Digital timer. Includes flasher module. Two rear outlets for bed vibrator and flashing lamp.

\*\*\*Phone-TTY, Inc.

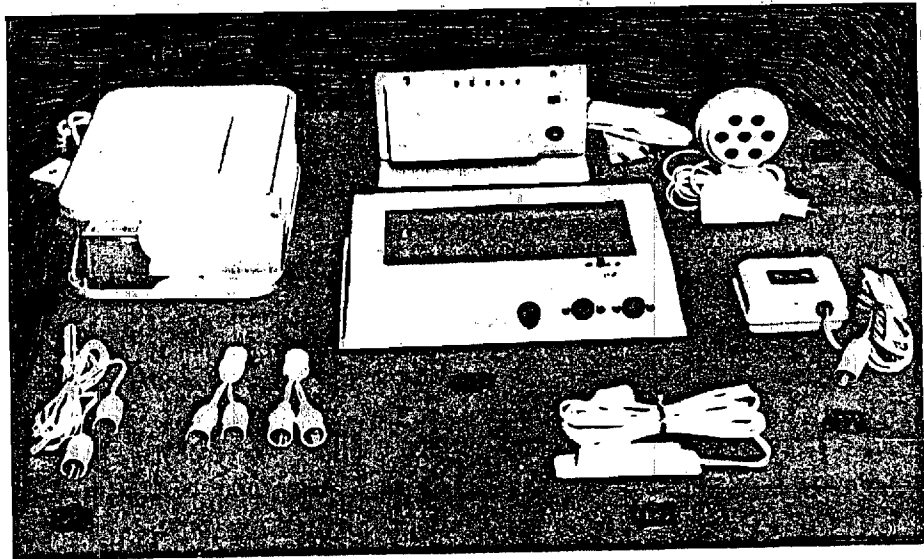




C. SIGNALLERS

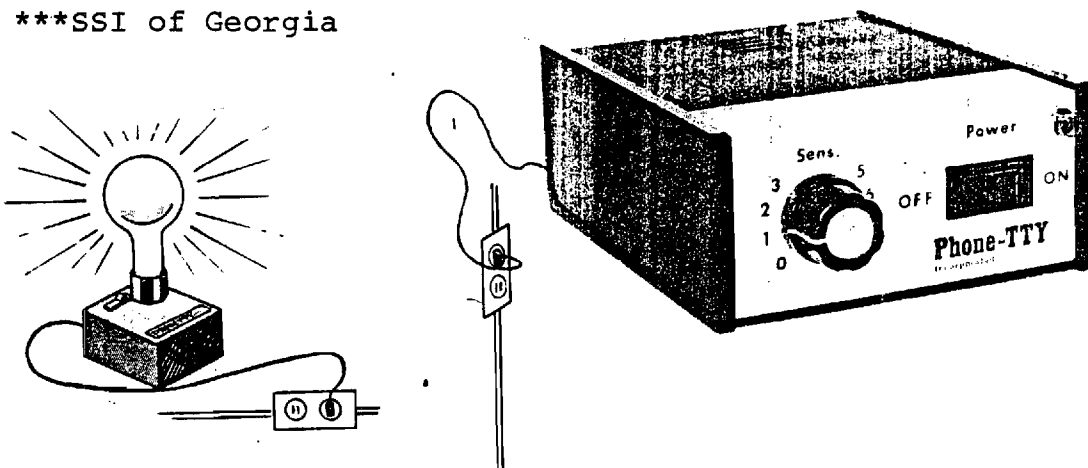
- 1) Alarm Alert. Also all-purpose signaller. Single or double channel control centers. Options include: pillow vibrator; microphone; induction pick-up for doorbell and telephone; extra cable; and signal relay.

\*\*\*Hal-Hen



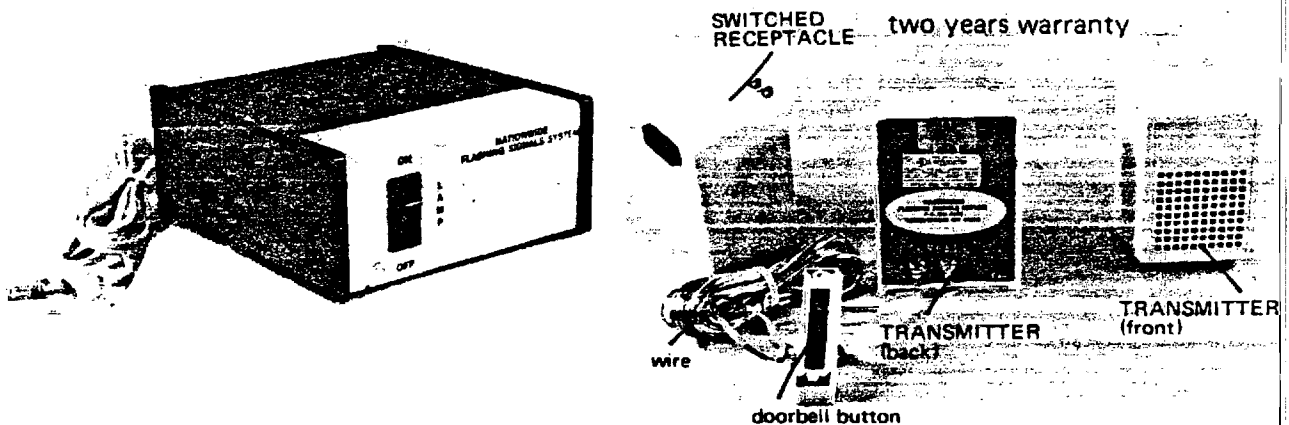
- 2) Baby Cry Signaller. Lamp or bed vibrator plug at back; can also work with Phone TTY wireless transmitter. 20' sensitivity radius. Picks up dog barking as well. Not affected by street noise or conversation.

\*\*\*SSI of Georgia



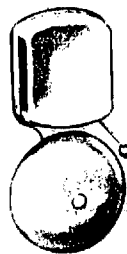
- 3) Flashing Systems, Inc. Wireless baby cry signaler: plugs into nearest outlet to crib; transmits to lamp or bed vibrator plugged into similar outlet attachment. Doorbell devices also work with outlet attachment. Remote control receiver flashes light whether lamp is on or off; can be used in every room; walnut finish.

\*\*\*Flashing Systems, Inc.



- 4) High-Intensity Doorbell. For the hard of hearing: 88 decibels at 3'. Low-voltage; 4" size.

\*\*\*Hal-Hen

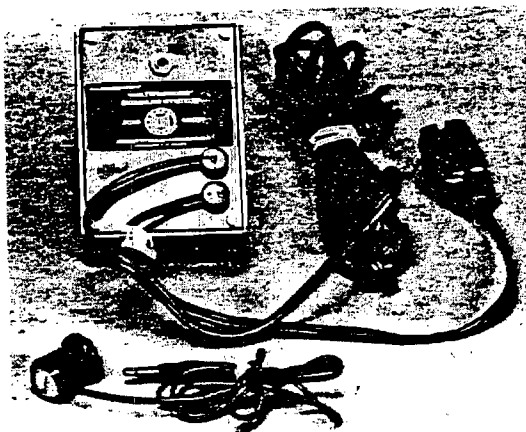


- 5) KE Series. Circuit relay devices for Baby Cry and Door Bell light(s). Extension cords must be furnished to room where transmitter located.

\*\*\*Devices for the Hearing Impaired

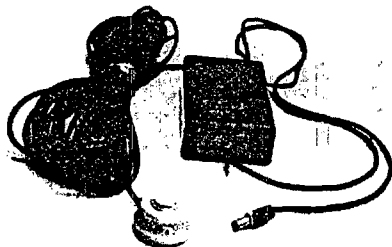
- 6) Multi-Purpose Signaler System (SU-4). Magnetic pick-up coil attaches to doorbeel or chime, with microphone for baby crying, dog barking, clock alarms, door knocks. Portable. Remote control transmitter also available.

\*\*\*Applied Communications Corp.



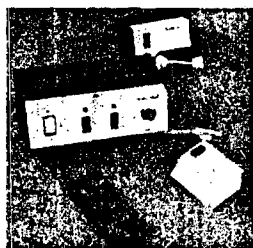
- 7) Portable Doorbell Accessory Attachment. For use with Electro-Alarm Clock (kit). Cable connects from clock to door. Uses own battery-power supply.

\*\*\*Hal-Hen



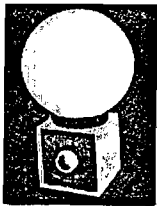
- 8) Sonic Alert. Sensors pick up sounds, flash codes. No wires needed; control unit, e.g. for bedroom. Portable.

\*\*\*Sound Barrier, Inc.



- 9) Sound Lamp with One Microphone. Uses standard house current. Sound-to-light conversion for doorbell, door knocks, etc.

\*\*\*Hal-Hen



- 10) Super Sound Lamp with Two Microphones.  
Same as Sound Lamp.  
3' and 25' microphone cord length.

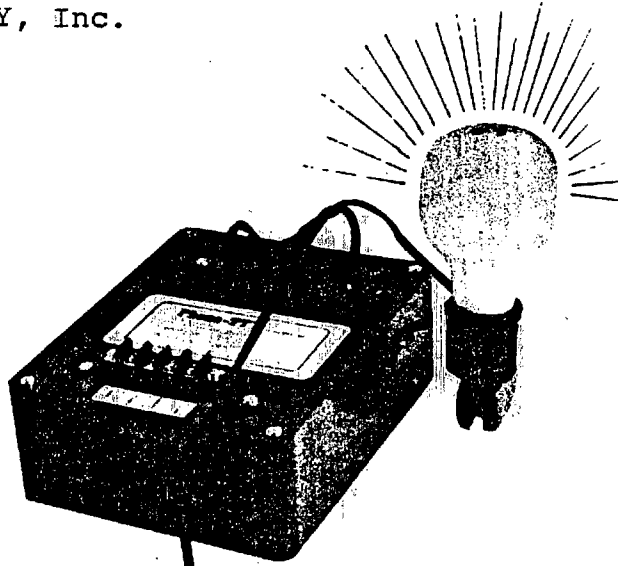
\*\*\*Hal-Hen

- 11) "Talking" Exit Signs. For use in all public buildings. Multi-message and single message formats. Programmed logic feature deducts and broadcasts priority message in multiple emergency situations.

\*\*\*Exit-Us, Inc.

- 12) Universal Doorbell Signaller. On-off flash for front door; steady glow for back door. Wireless. Can be connected with other signallers.

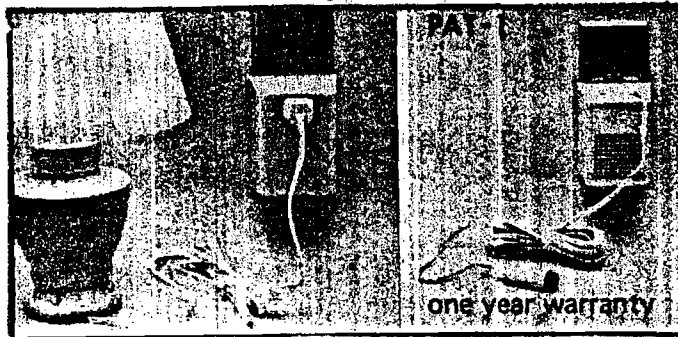
\*\*\*Phone TTY, Inc.



D. SIGNALLERS, PROTECTIVE

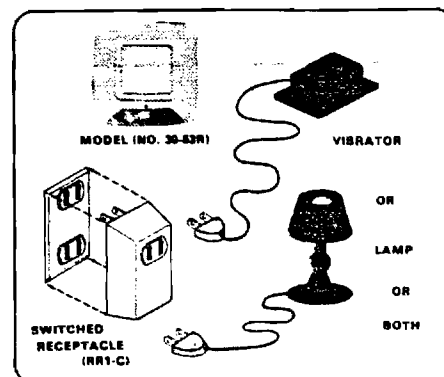
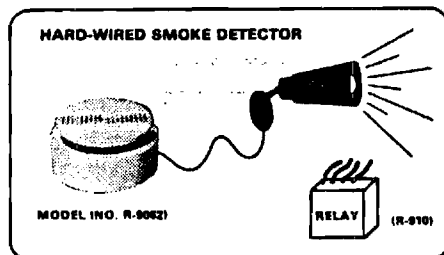
- 1) Panic/Pager Transmitter. Panic button automatically triggers all flashing alarms. Push again to stop. Portable. Optional alert signals in other rooms.

\*\*\*Flashing Signal Systems



- 2) Smoke Detectors. Hard-wired (up to five detectors) requires electrician to install. Wireless can be plugged in; uses 120-V house current; can be attached to bed vibrator. Horn receiver option for broadcast of alarm into neighbor's house.

\*\*\*Flashing Signal Systems



- 3) Visual Security Alarm System. Magnetic switch set triggers all alarms when door or window opened. Delays, delay cancels, reset feature, and violation light signalling unclosed door or window. Control center.

\*\*\*Flashing Signal Systems

E. TYPING

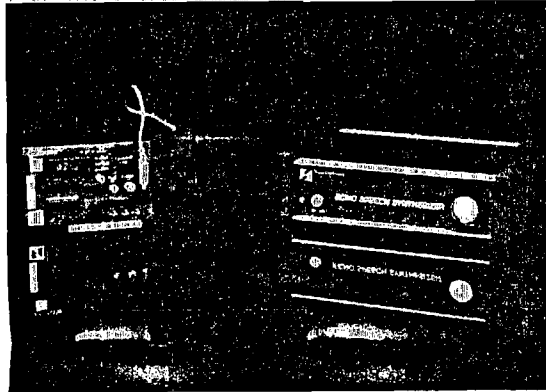
- 1) End-O-Line Lite. Green light comes on at same time as end-of-carriage bell.

\*\*\*Typewriting Institute for the Handicapped

## SPEECH SYNTHESIZERS

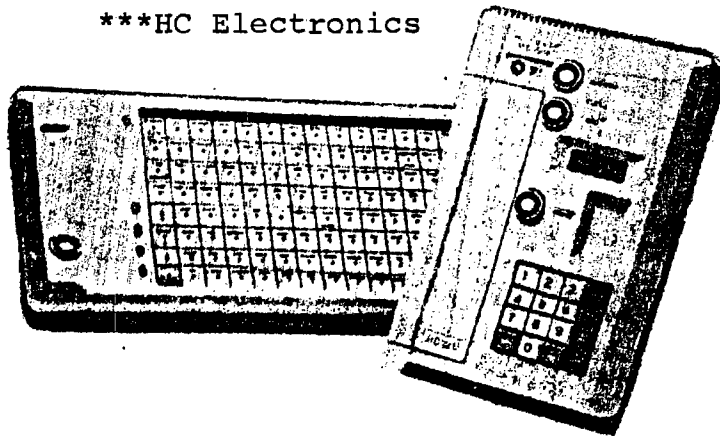
Echo and Echo II - Echo II requires Apple computer and 48 II or II/e disk drive. Converts text to words. Contains over 400 language and pronunciation rules. Both hardware and software required. General purpose Echo unloads host computer.

• Street Electronics Corporation



Phonic Mirror Handivoice - Sound (blowing, clicking, etc.); Pedal (hand or foot); Touch (head or hand operation); and Leaf (chin or arm movements, etc.) switches activate preprogrammed words, sounds or phrases.

\*\*\*HC Electronics



Say-It-All - Keyboard size speech synthesizer. Attaches to computers and printers with RS-232 connectors. Battery-charger. Words or phrases.

\*\*\*Innocomp

Vocaid - 4 overlay panels contain 140 words, numbers, phases. Emergency messages for phone. Leisure overlay facilitates playing games.

\*\*\*Luminaud



Voice-Mate - Bilingual "Yes" or "No" response unit. Answers in child's voice. Uses 9-V battery.

\*\*\*TASH



A Catalog of Commonly-Used Products for Deaf-Blind Persons

I. Communications.....	1
II. Sensors.....	1
III. Miscellaneous.....	2

## DEAF/BLIND

Communications - 1) Tac-Com. Cigarette-pack size transmitter produces tactile vibrating signals. Can be used as doorbell/telephone signaller, for end of braillewriter alarm, etc. Battery-operated.

\*\*\*Sensory Aids Evaluation &  
Development Center, MIT

2) Tactile Communicator.  
Vibrating radio paging system. Clock-radio sized transmitter; pocket-sized receiver. Five channels with priority levels; two uncoded. Call button for tapping messages. Battery-operated; battery-saving circuit.

\*\*\*Helen Keller National Center

3) Tellatouch. Standard typewriter keys plus 6 braille-writer type keys. Indention at back of machine for feeling braille as it is typed. Does not produce print.

\*\*\*American Foundation for the Blind

Sensors - 1) Mowat Sensor. Detects objects within a narrow range, scanning like a flashlight. Vibrates when object detected. For use with guide dog or cane.

\*\*\*Wormald International Sensory Aids

2) Portable Wake Alarm Kit. Uses any type alarm clock. It contains Control Center (5-second power-on surge when alarm activated); cable and pillow vibrator.

\*\*\*Hal-Hen

3) Vibrating Alarm Kit. Electric timer. Heavy-duty vibrator.

\*\*\*Hal-Hen

Misc. - 1) Klik-Lok Padlock. Combination lock works with parallel levers. Can be opened by feeling clicks.

\*\*\*Science Products for the Blind

2) "Turnabout" game. Strategy game for two players.

\*\*\*Science Products for the Blind

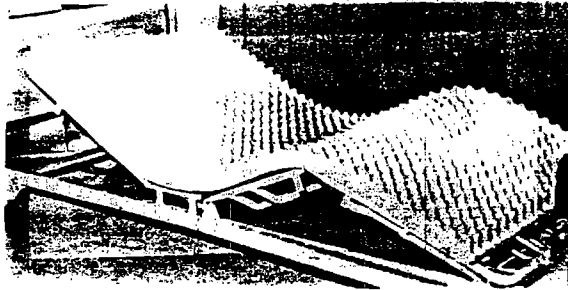
A Catalog of Commonly-Used Products for Persons with  
Spinal Cord Injuries

I.	Cushions.....	1
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III.	Personal Care	
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IV.	Reaching, Carrying, Holding	
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## CUSHIONS

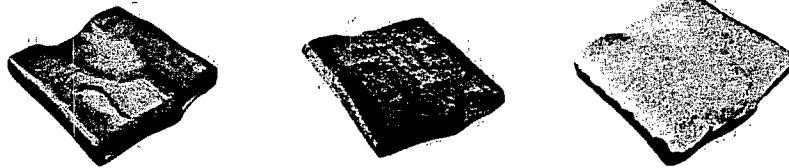
Bedfoam - 3 X 36 X 74.

\*\*\*Dave Harrison Products



Para Cushions - Foam; seamless covering. Sheepskin and cotton covers included, or cushion only or with one kind of cover. Shifts weight to thighs.

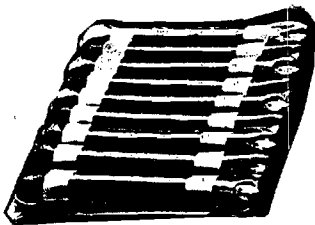
\*\*\*Preston Corp.



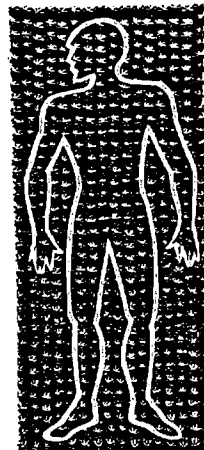
ROHO Mattress - Interconnected air cell mattress. Optional holes for urine drainage.

\*\*\*ROHO

Seat Cushions - DC/battery operated control unit provides surface movement in air cells. All cells and air tube replaceable. Cushion ties in place.



\*\*\*Huntleigh



## EATING

### A. Flatwear

#### 1) Holders

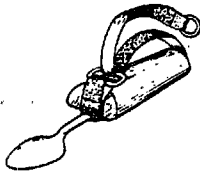
- a. Comfort Utensil Holders. Elastic band; pouch with Velcro closure allows varying utensil length. Sizes small, medium & large; 3 colors. Washable.

\*\*\*Fred Sammons, Inc.



- b. Plastic Utensil Holders. Heat-sealed vinyl with matte finish. Adjustable Velcro closure. Washable.

\*\*\*Fred Sammons, Inc.

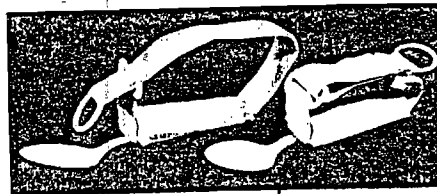


- c. Quad Utensil Holder. Velcro loop with thumb hole and "D" ring. Wood base angles spoon away from palm. Washable. One size fits all.

\*\*\*Nelson Medical Products

- d. Quad-Quip Utensil Holder. Velcro loop with thumb hole and "D" ring. Plastic base angles spoon away from palm. Washable. One size fits all.

\*\*\*Fred Sammons, Inc.



- e. Quad-Quip Dorsal Feeding Splint. Plastic-coated steel splint with palmar Velcro cuff. Adjustable wrist extension and angles.

\*\*\*Fred Sammons, Inc.

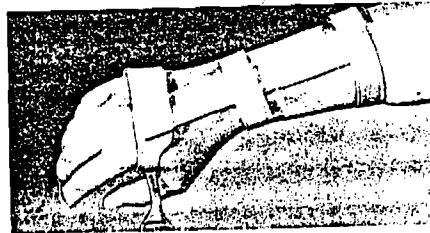


- f. Utensil Hand Grip. Spring action clip for both hand and spoon or fork.

\*\*\*Theracare

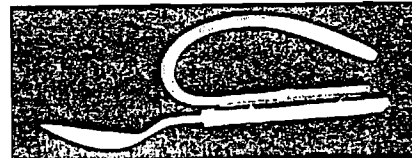
- g. Wrist Supports. Leather covered metal splints. Velcro closure. Comes with and without Plamar Clip; child, adult and large adult; and right and left-hand sizes.

\*\*\*Fred Sammons, Inc.



- h. "Your Utensil" Pocket. Right angle; turnable. Holds most flat-handled table knives. Also sold as Palmar Clip (pictured below) with pocket.

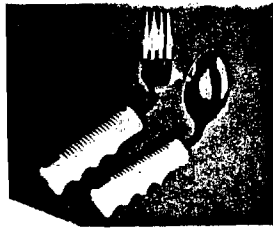
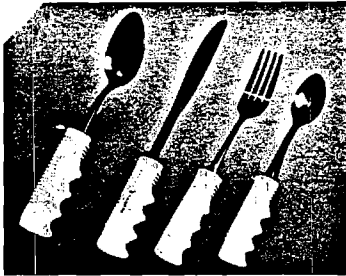
\*\*\*Fred Sammons, Inc.



2) Utensils

- a. Angle-Handle Utensils. Vinyl bicycle grip.

\*\*\*Theracare



- b. Built-Up Handle Utensils. Vinyl bicycle grip.

\*\*\*Theracare

- c. Built-Up Handles flatwear. Foam padded.  
Dishwasher safe.

\*\*\*Fashion Able



- d. Horizontal Palm Self-Handled Utensil. Bendable-adjustable plastic-covered hand grips. Available in teaspoon; long teaspoon; soup spoon; and fork.

\*\*\*Fred Sammons, Inc.



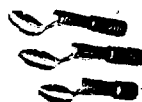
- e. Quad-Quip Meat Cutter Knife. Plastic-coated steel cuff; rocker stainless steel blade.

\*\*\*Fred Sammons, Inc.



- e. Swivel-Handle Utensils. Bowls swivel in large plastic handles. Available in baby spoon; teaspoon; and soup spoon.

\*\*\*Med, Inc.



- f. Vertical Palm Self-Handle Utensil. 90° bent. Adjustable plastic-covered handle; bendable utensil.

\*\*\*Fred Sammons, Inc.

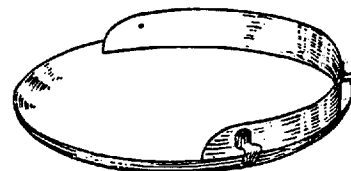


## B. Tablewear

### 1) Accessories

- a. Food Guard. Welded stainless steel. Fits 9" to 11" plate.

\*\*\*Nelson Medical Products



- b. Invisible Food Guards. Clear snap-on plastic rings. Dishwasher safe. Large & small sizes.

\*\*\*Be Ok

- c. Little Octopus Suction Holders. Suction cups on each side of rubber base. 3" diameter.

\*\*\*Fred Sammons, Inc.



- f. Non-Slip Place Mats. Three sizes; non-slip material also available.

\*\*\*Med, Inc.

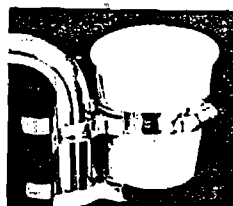
- g. Plastic Drinking Straws. Flexible; stay locked after bending. Individually wrapped. Sold in boxes of 400.

\*\*\*Nelson Medical Products

## 2) Cups/Mugs

- a. Clip-on Glass Holder. For wheelchair; stainless steel.

\*\*\*Nelson Medical Products

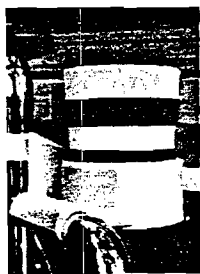
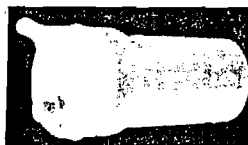


- b. Easy-Grip Mug. Heat-resistant, unique handle. Holds 11 oz. Plastic; assorted colors.

\*\*\*Fashion Able

- c. Even-Flo Cup. Can be used while lying on back or side. Vacuum-flow stops when not drinking. Flow adjustment; lid and spout prevent spilling. Molded nylon.

\*\*\*Fashion Able



- d. Handi-Cup. No tools required for attachment. Also holds ashtrays. Straight arm or desk-type arm, left or right hand models available.

\*\*\*Fashion Able

- d. Helping Handles.  
Epoxy putty attaches  
to cups, faucets, etc.  
Hardens overnight.  
Can be painted or  
stained.

\*\*\*The Felix Co.



- e. Insulated Mug. Foam insulation. 8 oz. capacity.  
Dishwasher safe. No color choice.

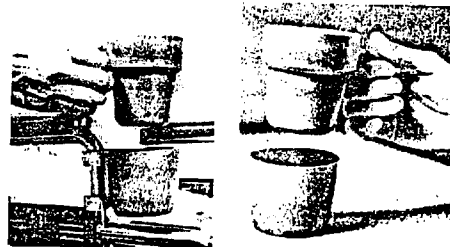
\*\*\*Be OK

- f. Lazy Susan Glass and Straw Holder. Tip-proof rubber  
feet base. Straw holder swivels out of the way when  
eating.

\*\*\*Fred Sammons, Inc.

- g. Wheelchair Cup Holder with Cup. Cip-on. Dishwasher  
safe. Cup has lid with opening. No color choice.

\*\*\*Fred Sammons, Inc.



### 3) Plates, Bowls

- a. Hi-Lo Aluminum Dish. High side is 2"; low is 3/4".  
8" diameter. Not for use in oven or on stove.

\*\*\*Fred Sammons, Inc.

- b. Hi-Wall Plate. China. White or white with band.  
Sold singly or in sets of 10.

\*\*\*Be OK



- c. Non-Skid Dinnerware. Melamine dinner, salad plates; soup, cereal bowls; drinking cups. Clear plastic tumblers, salt and spice shakers. Non-skid rings at base prevent sliding at 25° incline.

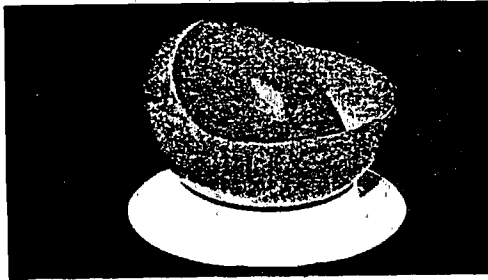
\*\*\*Maddak

- d. Scoop Dish. Extra-thick melamine; reinforced rim and base. Groove in lip for resting utensil. White.

\*\*\*Be OK

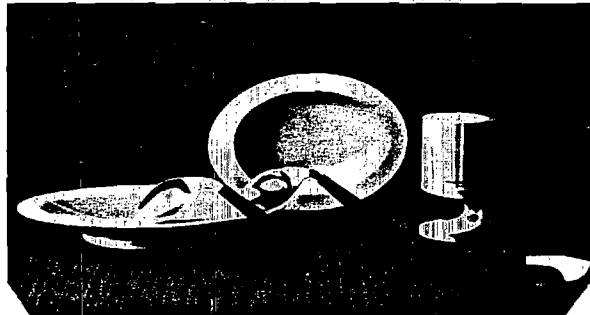
- e. Scooper Bowl. Rolled over side. 4" diameter. Dishwasher safe; removable non-skid vinyl base.

\*\*\*Fred Sammons, Inc.



- f. Tableware. Contoured melamine oval plates (2) and offset beaker. Light blue. Sold as set with rocker knife and left and right-hand spoons, polypropylene handles.

\*\*\*Theracare



C. Systems

- 1) Arm Rest. Tilts forward and backward, swivels for eating. Plexiglass support, rod and drilled-for-fastening metal base. Support 7 1/4" long.

\*\*\*Theracare

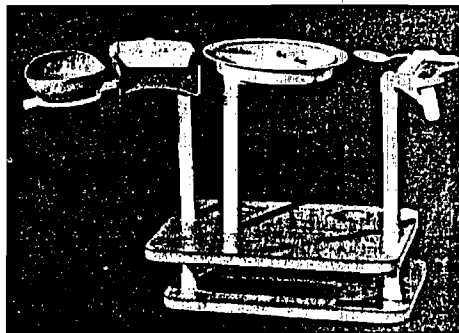


- 2) Independently Controlled Feeding Apparatus. Plate, moved by plate rotation knob, rests on laminated plastic base. Spoon-arm controlled by pad, release knob, and speed adjustment. Optional stabilizing knob for free hand. Detachable plate and spoon.

\*\*\*Orthopop

- 3) Quad-Quip Feeding Aid Kit. Two-tier base tray with adjustable vinyl pipe to hold scooper bowl, partitioned melamine plate, sandwich holder, utensil holder. Base holds cups and glasses. Unassembled; non-portable.

\*\*\*Fred Sammons, Inc.



- 4) Winsford Feeder. Chin or hand/foot control switch. Repeat to lower spoon; push in other direction to rotate plate. Beverage holder. Plate and spoon included. Battery-operated; charge overnight once a week. Adjustable height. Carrying case optional. Not for use by children.

\*\*\*Winsford Products, Inc.

## PERSONAL CARE

### A. Bathing

- 1) Bath Cushions & Belts. Cushions are air-inflated rubber; belts are soft, waterproof fabric with two handgrips.

\*\*\*Med, Inc.



- 2) Curved Bath Brush. 180° curve.

\*\*\*Be OK



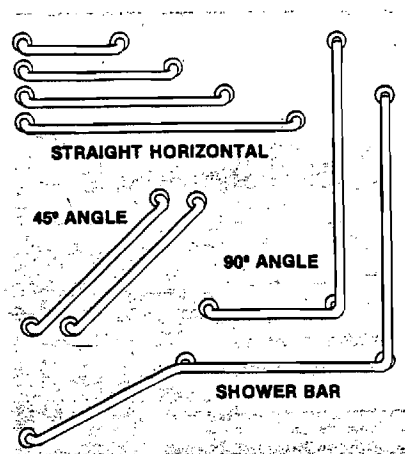
- 3) Hand-Held Shower. On-off bar in handle. 6' flexible hose. May be attached to shower or tub spout.

\*\*\*Med, Inc.



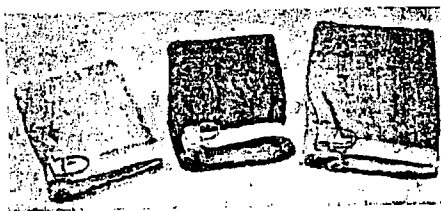
- 4) Hand Rails & Grab Bars. In stainless steel, white or sand. Not all types in all colors.

\*\*\*Med, Inc.



- 5) Majic Soaper Bath Brush. Holds bar of soap in sponge of brush.

\*\*\*Med, Inc.

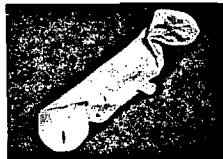


- 6) Quad-Quip Wash Mitts. Terry cloth with Velcro wrist closure; thumb unlockable. Available in large, small and medium sizes.

\*\*\*Be OK

- 7) Super Soaper. Terry cloth sling. Thumb holes.

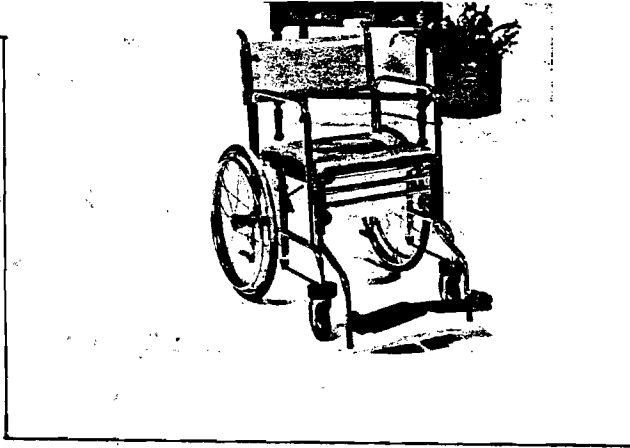
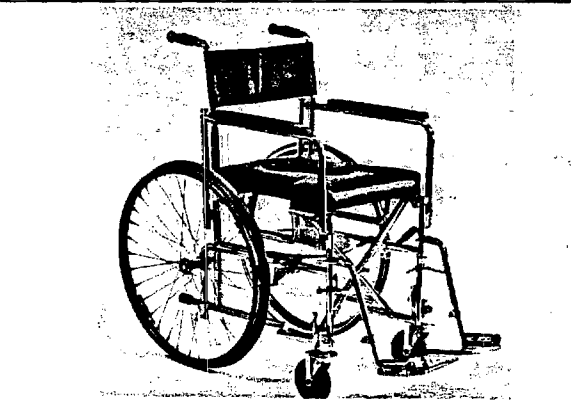
\*\*\*Med, Inc.



B. Chairs

- 1) Shower Chair/Commode. Self-propellable. Removable armrests, swing-away footrests. Padded seat and back; solid seat insert. Front wheel brakes.

\*\*\*Med, Inc.



- 2) Shower Chair/Commode for High-Level Paralysis. Height-adjustable swing-away footrests; seat 23 1/2" off floor. 24" rear wheels with toggle brakes. Cut-outs for self-care.

\*\*\*Med, Inc.

- 3) Shower/Commode Chair. Detachable, pivoting arms. Designed for narrow doors. Foam-cushioned, urine-proof seat. Can be used over stationary toilets or as portable commode.

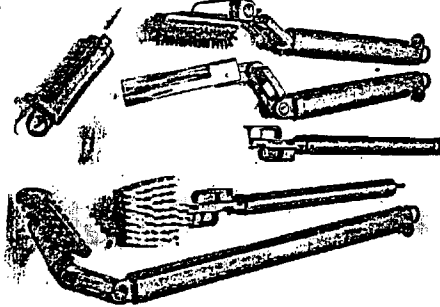
\*\*\*Everest & Jennings



C. Grooming

- 1) Adjustable Extension Grooming Kit. Oval-shaped handles for single or two-hands grip. Six attachments: bath brush; long-handled bath brush; washcloth; comb; pig's bristle hair bursh; nail file.

\*\*\*RFSU Rehab



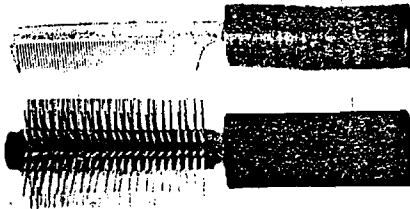
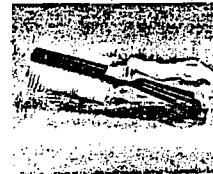
- 2) Built-Up Handle Toothbrush. Foam.

\*\*\*Be OK



- 3) Hair Brush with Velcro Handle. Plastic teeth; washable. Locks firmly to hand.

\*\*\*Be OK



- 4) Soft Built-Up Handle Comb & Hair Brush. Foam.

\*\*\*Be OK

- 5) Universal Electric Razor Holder. Fits all popular name brands. Velcro straps on bendable vinyl-covered steel handle. Foam-padded.

\*\*\*Be OK

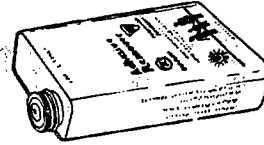


D. Hygiene

1) Accessories

- a. Adhesive Remover. Dissolves skin cements without irritating skin.

\*\*\*Nelson Medical Products



- b. Dignity Odor Eliminator. Spray. Does not disguise odors; eliminates them. Helps reduce urine scald.

\*\*\*Fashion Able

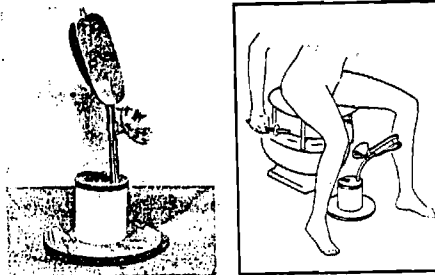
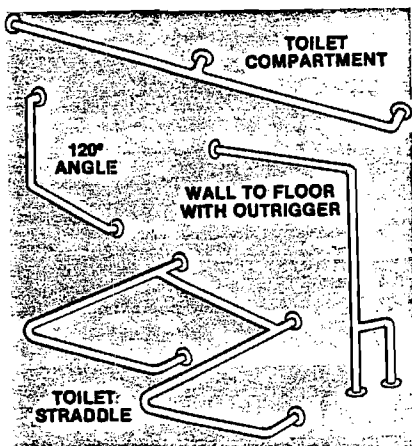
- c. Para Inspection Mirror. Long-handled head mirror for inspection of pressure areas. Folds.

\*\*\*Be OK



- d. Quad-Quip Lighted Inspection Mirror. Floor-based; lamp and mirror on flexible metal tube can be angled separately. Uses 6-V battery.

\*\*\*Be OK

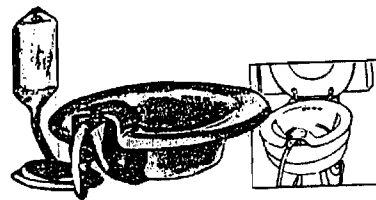
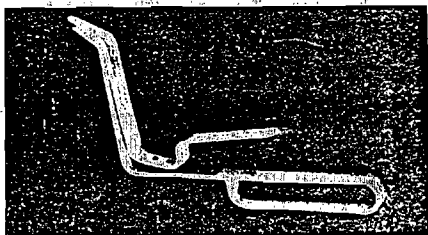


- e. Rails. Stainless steel for toilet compartments.

\*\*\*Med, Inc.

Sitz Bath. Plastic; fits inside toilet seat. Contoured seat.

\*\*\*Nelson Medical Products



Toilet Aid. Plastic. Spring clip with grasp loop.

\*\*\*Be OK

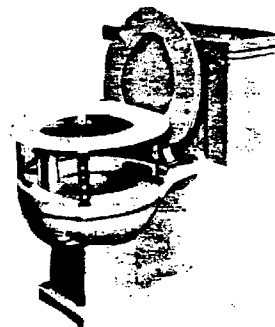
Urinary Deoderant, Detergent. For daily washing of bags, tubing, etc.

\*\*\*Nelson Medical Products.

## 2) Toilets

Economy Raised Toilet Seat. Plastic front splash guard. Adjusts from 4" to 8". Duro-Lok design.

\*\*\*Duro-Med Industries, Inc.



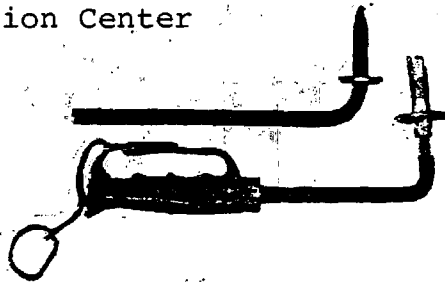
- b. Toilet Seat. Padded, adjustable seat with 4" clearance between bowl and seat. Portable.

\*\*\*Activeaid

3) Urinals

- a. Bowel Program Devices. Rectal stimulator and suppository inserter. "D" ring one piece strap.

\*\*\*Woodrow Wilson Rehabilitation Center



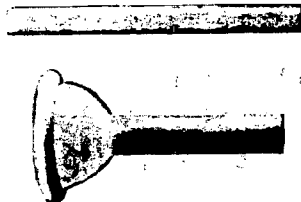
- b. Drip Urinal. 5 oz. capacity. Built-in sheath.

\*\*\*Nelson Medical Products



- c. External Catheter. Latex pouch; leakproof. Attaches to any type leg bag or drainage system. Reinforced funnel design prevents twisting and shut-off.

\*\*\*Medi, Inc.



- d. External Catheter Disposable. Elastic foam strap. Lightweight latex sheath. Connects to any drainage bag or receptacle. Sold in boxes of 12 or 50.

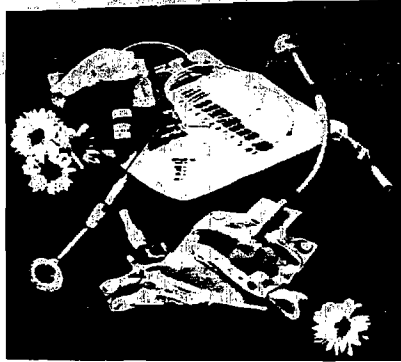
\*\*\*Nelson Medical Products

- e. External Catheter Instruction Kit. Included 1 completed catheter; 1 piece tubing; 6 prophylactics; 2 reusable plastic inserts; and 6 foam straps. Detailed instructions. Assembly tool also sold for assembly with less than average hand strength.

\*\*\*Nelson Medical Products

- f. Female Urinator. Stain and odor-resistant plastic. Boilable. Anatomically contoured. Handle.

\*\*\*Fashion Able



- g. Femex Female External Urinary Catheter. Catheter is bonded with adhesive; may be retained 1 to 2 days and reused after cleaning. Attaches to leg or bed bag.

\*\*\*Medoc Corp.

- h. Latex Leg Bag. Leakproof, lightweight. Adjustable rubber straps. Bottom fitting serves as drain.

\*\*\*Nelson Medical Products



- j. Male Urinal with Cover. Grip handle. One qt. capacity. Both sterilizable and non-sterilizable models.

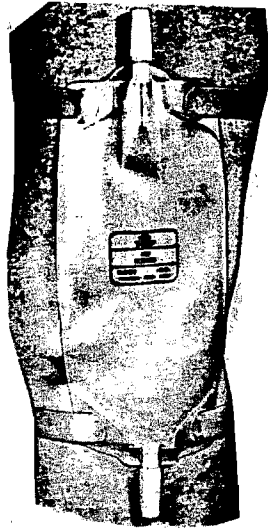
\*\*\*Duro-Med Industries, Inc.

- k. Male Urinals. One size fits all. All-washable; snap-off sheath. Elastic waistband. One-way valve prevents fluid return.

\*\*\*Duro-Med Industries, Inc.

1. Urinary Leg Bag. Leakproof disposable plastic with rubber straps. Sterile.

\*\*\*Medi, Inc.



- m. Urinals. Heavy duty polyethylene with handles.  
Lids. Can be sterilized. In male and female models.

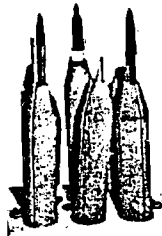
\*\*\*Nelson Medical Products

REACHING, CARRYING, HOLDING

A. Carrying & Holding

- 1) Built-Up Pencil & Crayon Holder. Thumbscrew adjustment holds chalk to small art brushes. Wood. Sold singly or in sets of 6 with stand.

\*\*\*Nelson Medical Products



- 2) Glass with Holder and Lid. Broad-base polypropylene holder with supporting lip for second-hand holding. Can be carried by handle or between handle and glass. Sealing snap-down lid with spout. Insulated glass.

\*\*\*RSFU Rehab

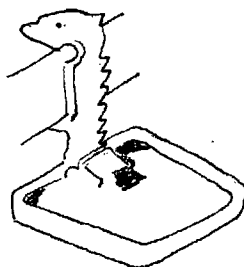


- 3) Have-A-Tray. For wheelchairs, crutches, walkers. Two compartments. In blue, brown and black. Order in Master Cartons of 6.

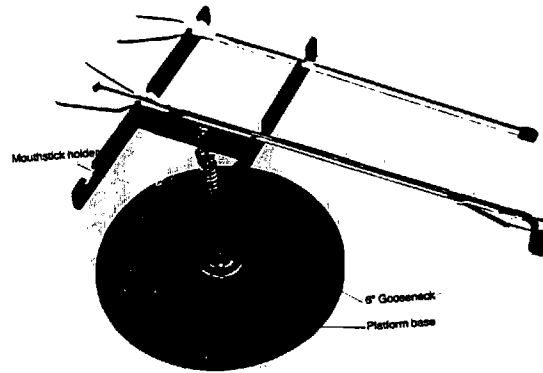
\*\*\*Ulico, Inc.

- 4) Jaws Clamp Tray. Horizontal and vertical clamping by squeeze lock and fingertip release. 51 sq. inch table area. Sand color.

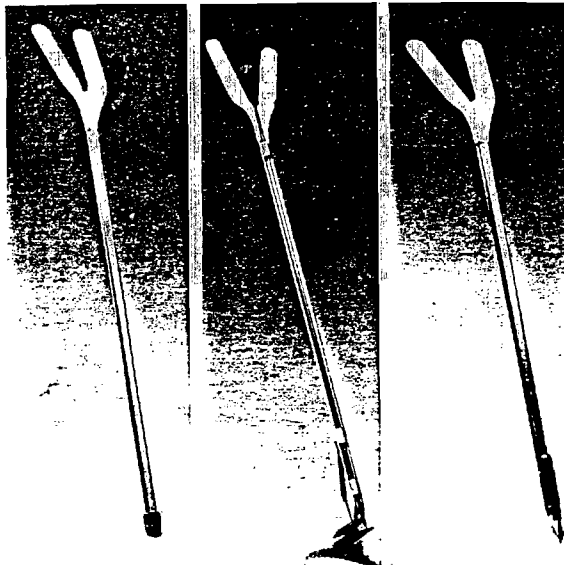
\*\*\*Ange Co.



- 5) Key Holder. For extra leverage. Holds 4 keys.  
Plastic with brass screws.  
\*\*\*Nelson Medical Products
- 6) Key Holder, Deluxe Adjustable. Plastic frame with  
spacers for 1 to 8 keys. Adjustable tension.  
Leather thong loop.  
\*\*\*Be OK
- 7) Klick Pencil Holder. Two rollers and jaws click to  
grip. Screwdriver adjustment and lock.  
\*\*\*Be OK
- 8) Mouthstick Docking Station Kit. Platform base; non-  
skid cushion pad. 6" and 13" goosenecks. 2 or 3  
mouthstick holder sizes.  
\*\*\*Adlib, Inc.



- 9) Mouthsticks. Page turner; pincher; and automatic  
pencil mouthsticks. Lightweight aluminum. Specify  
lengths.  
\*\*\*Adlib, Inc.





- 10) Quad-Quip Phone Holder. Plastic-covered metal frame; bendable adjustable. Velcro closure fastener.

\*\*\*Be OK



- 11) Sure-Grip Glass Holder. Provides handle. Stainless steel; plastic-covered handle. Thumbscrew adjustment.

\*\*\*Be OK



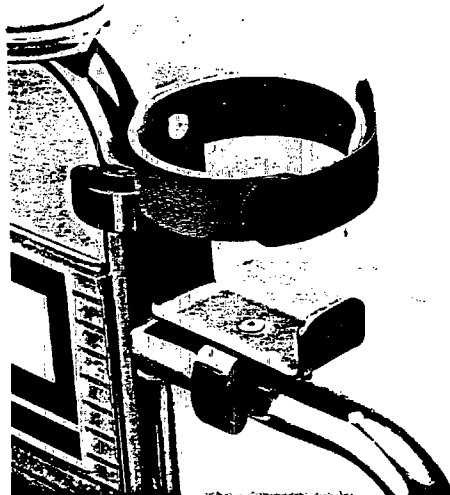
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For additional  
information on  
glass holders, etc.,  
see Eating, pages  
7-8.

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- 12) Wheelchair Beverage Holder. Armrest upright and front bar clip-on holders. Plastic; Vlecro closure for different-sized containers. Blue, brown or beige.

\*\*\*Adlib, Inc.



- 13) Wheelchair Carryall. Velcro strap fastening. Zipper top. 2 outside pockets each side. Blue denim or camel vinyl.

\*\*\*Fashion Able

- 14) Wrap-Around Pen and Fork Holder. Leather index finger cuff and Velcro strap with thumb loop.

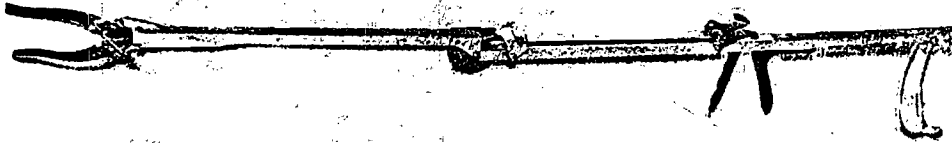
\*\*\*Be OK



B. Reaching

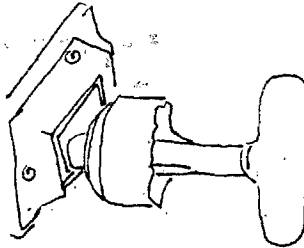
- 1) Angle Arm Reacher. Swinging grab arm; built-in control to prevent retrieved objects from striking wrists. Tongs open to 3 3/4"; rubber-lined. Aluminum; plastic handle and trigger. Weight 12 oz. @B

\*\*\*Fred Sammons, Inc.



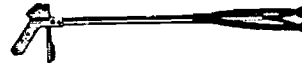
- 2) Contour. Conforming rods. For doorknobs, keys, etc.

\*\*\*Hugh Steeper Ltd.



- 3) E-Z Reach. In 20" and 30" lengths. Aluminum. Pick-up to 2 lbs. Weight 9 oz. Also available in 27" length with magnetic tips. @A

\*\*\*Nelson Medical Products

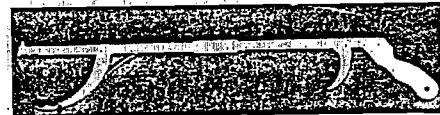


- 4) Folding Reacher. 22" long; weight 6 oz. Magnet at end of jaw.

\*\*\*Homecraft

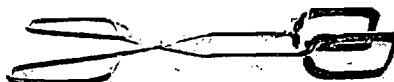
- 5) Folding Reacher. 19" long. Magnet.

\*\*\*Be OK



- 6) Giant Tongs. Chrome-plated; serrated jaws. Large hand grips. 15" long.

\*\*\*Be OK

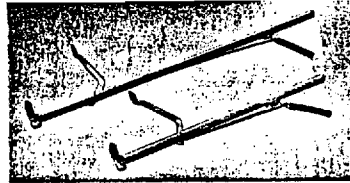


- 7) Grab-All Extension Arm. Rubberized grippers. In 29 1/2" and 42" lengths. @A

\*\*\*Homecraft

- 8) Hawkbill Reachers. Wood and aluminum. Pointed rubber jaws. Plastic-coated "spur" opposite jaws pulls or pushes. In 20" and 24" lengths. @A

\*\*\*Fred Sammons, Inc.



- 9) Helping Hand. Trigger clamp. 26 1/2" long; weight 5 1/4 oz.

\*\*\*Theracare



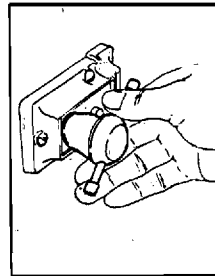
- 10) Hook. 18" long.

\*\*\*Nelson Medican Products



- 11) Knob Turner. Rubber cup with wood cross bar. Fits over Yale-type locks.

\*\*\*



- 12) Light Switch Extension. Push rod up to turn light on, down for off. Plastic. 14 1/2" long.

\*\*\*Be OK

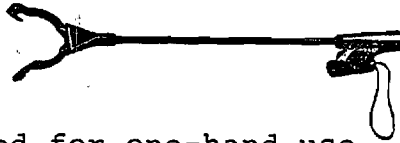


- 13) Magnetic Pick-Up. Telescopic handle. Ball joints position in any angle. Extends to 26 3/4". @A

\*\*\*Edmund Scientific

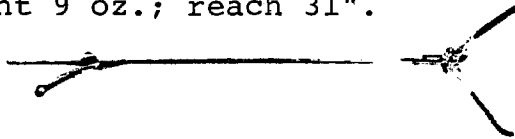
- 14) Pistol Grip Reacher. Minimal finger strength required. Rubber padded claw. Plastic-coated steel tube and handle; plastic claw. 25" long; weight 7 1/2 oz.

\*\*\*Be OK



- 15) Reacher. Designed for one-hand use. Wood shaft; metal working parts. Weight 9 oz.; reach 31".

\*\*\*Fashion Able

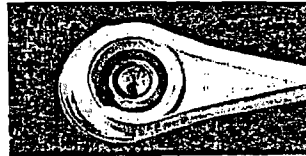


- 16) Rehab. Reachers. In 6 oz./26 1/2" and 8 oz. 32 1/2" models, with magnets or attachment clips for walkers, etc., or modified trigger mechanism for limited dexterity. Also folding model.

\*\*\*ConMed Equipment Corp.

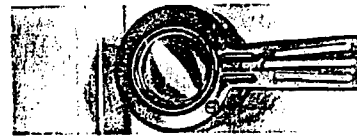
- 17) Rubber Doorknob Extension. Gray.

\*\*\*Fred Sammons, Inc.



- 18) Steel Doorknob Extension. Three mounting screws. Bronze finish.

\*\*\*Fred Sammons, Inc.



- 19) Tongs. Rustproof. 15" long.

\*\*\*Fashion Able



- 20) Top Shelf Reacher. Scissors grasp. Chrome-plated with finger-like rubber grips. 21" reach.

\*\*\*G.T. Water Products, Inc.

- 21) Walking Stick with Remote Pick Up. Remote, magnetic gripper. Available in lengths 30" to 35".

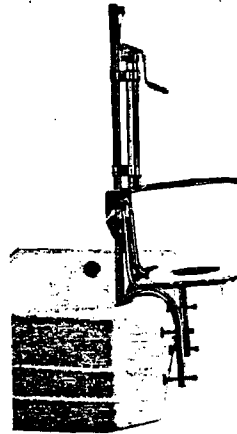
\*\*\*



## TRANSFER

Bath Chair Lift - Hydraulic. Fits any tub. Can be attached in minutes, removable.

\*\*\*Theracare



Druallift 500 - Uses house current. Push button control; switch hangs free of 4-strap lift. Steel and aluminum track system supports 500 lbs. Ceiling or free-standing mounting.

\*\*\*Tergo Corporation

LIC Lift-Transfer System - Wheeled device; hand crank lifts, lowers and transfers person being transported. Single lifting seat strap; chest and arm supports.

\*\*\*Century Manufacturing Co.

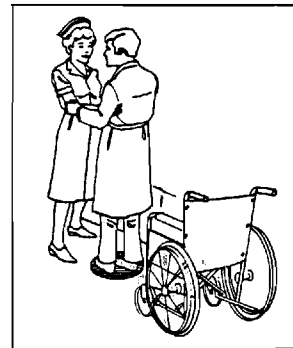


Master Hoist - Automatic overload operation. Twin switch guard plates. Step-down transformer required. Carries 350 lbs.

\*\*\*Carters (J&A) Limited

Ortho-Turn - Rotating disc. Rubber non-slip platform covering.  
Rubber base grips floor.

\*\*\*Ballert Orthopedic Corp.

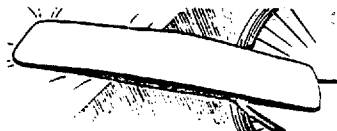


SE 400 Transfer Lift - Free-standing or ceiling mounted.  
Supports 400 lbs. Control box on  
separate line has nightlight, bump  
guards, can be operated by finger  
or chin. 4-strap support. Also  
comes in DL 500 model with override.  
Ground fault interrupter for use  
near water.

\*\*\*Independent Transfer Equipment Corp.

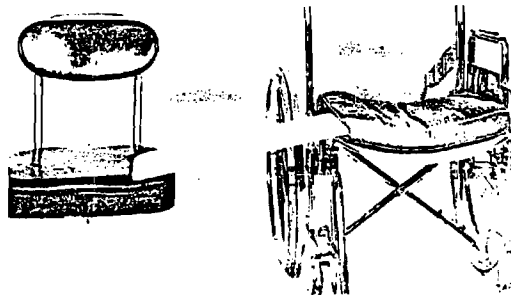
Sliding Board - Maple. Ends tapered to 1/8". 8 X 30" long.

\*\*\*Fashion Able



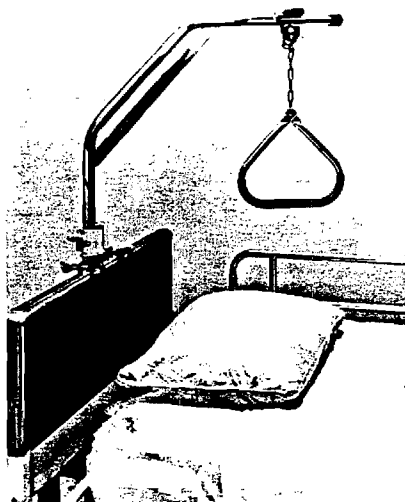
Transfer Boards - 7 1/2" X 27" wood with wood-grained plastic top, tapered ends, model. Also model with swivel hinge for non-slip use with wheelchair with removable armrests (shown).

\*\*\*Nelson Medical Products



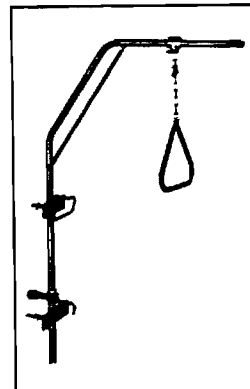
Trapeze - Swivel trapeze is mounted on bed, comes with wall bumper. Can be locked into five positions.

\*\*\*Medfurn



Trapeze Bars - Vinyl-coated clamps, wall bumper included. Adjustable upright and grab bars. Swivel clamp option, locks into five positions. Standard and heavy-duty models. Supports 250 lbs.

\*\*\*Theracare





## WHEELCHAIR ACCESSORIES

### A. Bags, Pouches, Etc.

- 1) Carry-All. 2-compartment tote with swingaway arm. Model for wheelchairs and for crutches and walkers.

\*\*\*Harriet Carter

- 2) Carrying Bags. 14" X 14" bag attaches to back of wheelchair. Black or blue demin vinyl.

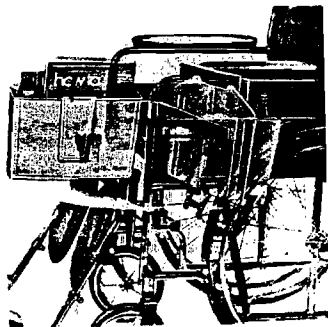
\*\*\*

- 3) Foremost Pouch. Fits on front of all wheelchairs, adjustable for brake, wheel and armrest types. Velcro closure. Vinyl leather in black, brown and tan.

\*\*\*Madison Pouch Co.

- 4) Have-A-Tray. 2-compartment; swing away motion. For wheelchairs, crutches, walkers. Blue, black and brown.

\*\*\*Ulico, Inc.



- 5) Shopping Bag. 14" X 13". Black vinyl. Fits across back of wheelchair.

\*\*\*

- 6) Side Pouches. 6" X 13". Fits wheelchair with standard armrest. Blue denim or black vinyl.

\*\*\*

- 7) Spanners. Nylon. Available in large and small back packs; side totes; and walker packs. In royal, red, tan, green and black.

\*\*\*Spanners



B. Miscellaneous Accessories

- 1) Brush. Stretchable handstrap; stores on brake lever. Curvature fits solid and inflated tires.

\*\*\*D.B. Products Co.



- 2) Castor Lock with Quad Extension. Locks in trail position for transfer.

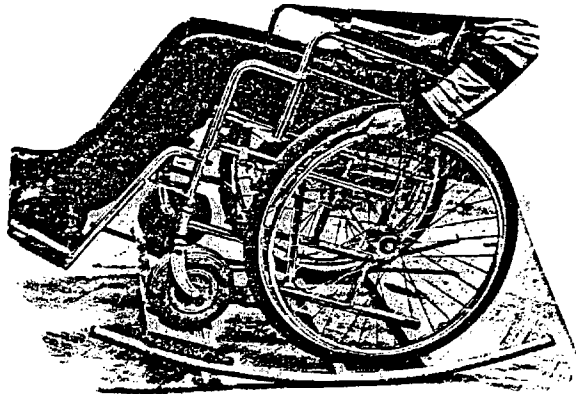
\*\*\*Med, Inc.

- 3) Power Drive. Power drive mounts at back of chair; batteries below seat. Portable. Manual controls include hi-lo speed switch, horn, battery meter, and telescoping arm mount.

\*\*\*Damaco, Inc.

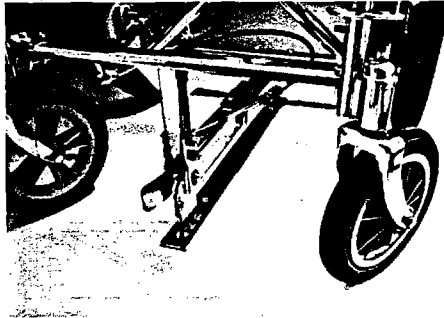
- 4) Rocker. Rocking platform mounted by doing a "wheelie"; turnbuckle lock. Ramp system for quadraplegics.

\*\*\*Woodrow Wilson Rehabilitation Center



- 5) Speed-Lock Restraint System. Manual emergency release. Uses existing wheelchair battery. Exact positioning with automatic stops.

\*\*\*Target Industries



- 6) Tires. Flatproof inner tube; Lite-Ride [solid]; and Sports-H.P. [solid and pneumatic].

\*\*\*Wilson Wheel & Tire Co.

C. Rests, Cushions, Etc.

- 1) Adapta-Belts. Instant push release. Plastic unbreakable buckle. 1" poly-web. Washable.

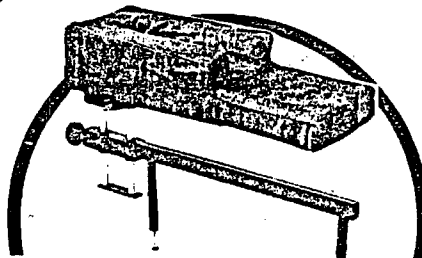
\*\*\*Modular Medical Corp.

- 2) Armrests. Warm to the touch; non-slip; slightly yielding. Two sizes; three colors. Guaranteed for 99 years.

\*\*\*Theradyne Corp.

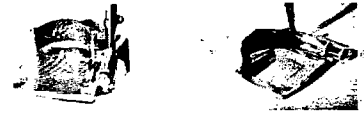
- 3) Deluxe Adjustable Armrest. Foam, steel and wood. Removable cordury cover. Adjustable; fits standard removable arm wheelchair. @B

\*\*\*Fred Sammons, Inc.

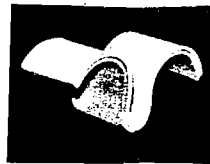


- 5) Heel Loops. Fits all wheelchairs. Heavy webbing.  
\*\*\*Nelson Medical Products

- 6) Heel Loops. Naugahyde covered.  
\*\*\*Med, Inc.



- 7) Knee Separators. Padded heavy plastic. Flexible.  
\*\*\*Med, Inc.



- 8) Leg Strap. Heavy webbing; adjustable Velcro closure.  
\*\*\*Nelson Medical Products

- 9) Pedal Pads. Secured with Velcro. Thick kodel.  
\*\*\*Nelson Medical Products



- 10) Push Kufs. Cowhide. Crepe palm for traction. Pairs,  
or left or right; two sizes; thumb or thumbless.  
\*\*\*Scimedics, Inc.

- 11) Sacral Pad. Polyurethane foam. Polyester knit cover.  
Meets fire retardancy standards. Adult, narrow adult  
and custom sizes. Washable.  
\*\*\*Scimedics, Inc.

- 13) Self-Centering Headrest. Foam rubber padding. Attaches to back uprights of chair.

\*\*\*Med, Inc.

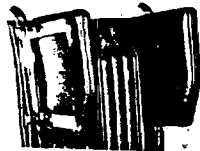


- 14) Solid Seat and Back Inserts. Padded, vinyl covered inserts. Can be ordered to match chair upholstery.

\*\*\*Med, Inc.

- 15) Tiny Tot Headwings. Attach to the back uprights of the chair.

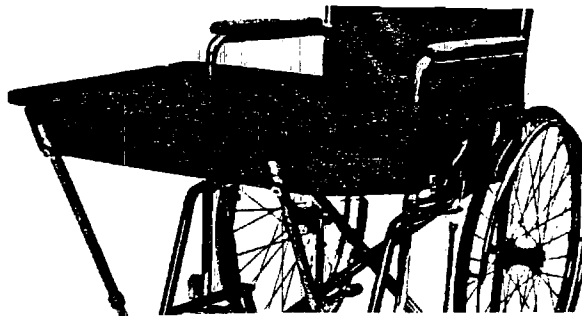
\*\*\*Med, Inc.



#### D. Trays

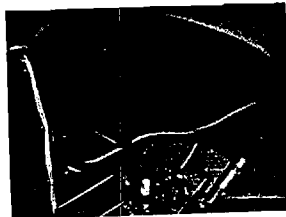
- 1) Desks. Strong enough to hold typewriter or sewing machine. Woodgrain high-pressure laminate. School desk, slotted top, and cutout models.

\*\*\*Theracare



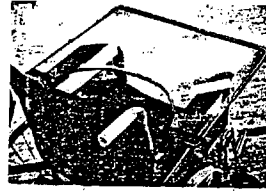
- 2) Range of Motion Tray. For children; allows full range of motions. Curving design. Will pass through doorways.

\*\*\*Med, Inc.



- 3) See-Thru Work Tray. Velcro attachment straps. Polished aluminum rim. Will not crack or break.

\*\*\*Fred Sammons, Inc.



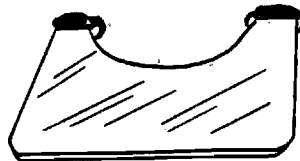
- 4) Table. Walnut finish formica top. Bib front fits between wheelchair arms. Leg assembly required.

\*\*\*Duro-Med Industries, Inc.



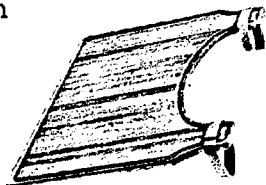
- 5) Tray. Velcro strap attachments. Universal design for all wheelchairs. Comes in clear acrylic and formica models. Formica also in child's size.

\*\*\*Duro-Med Industries, Inc.



- 6) Tray. Non-glare light formica. Velcro straps. "T" moulding on all sides. Two sizes.

\*\*\*Hausman



- 7) Tray. Super economy lap tray. Masonite. Velcro straps.

\*\*\*

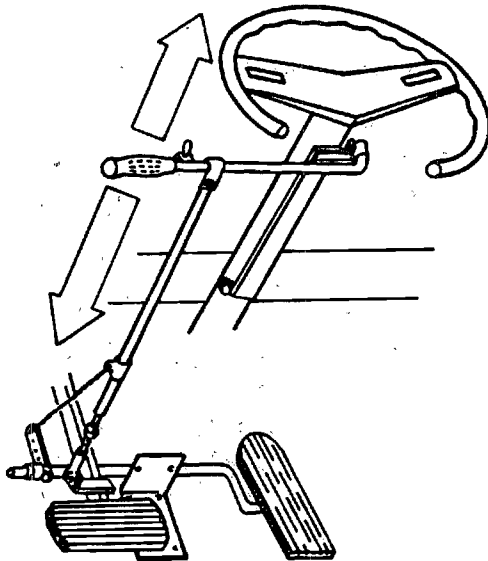
- 8) Work Tray. Clear ABS plastic. Universal mounting; specify long or short arm. Snap-on; no screws. Dishwasher safe.

\*\*\*Consumer Care Products, Inc.

## VANS, VAN MODIFICATIONS

- Controls - 1) Auto-Mate Controls. One hand mechanism- push to stop, pull to start. Can be self-installed; does not interfere with foot operation of car.

\*\*\*Nelson Medical Products, Inc.

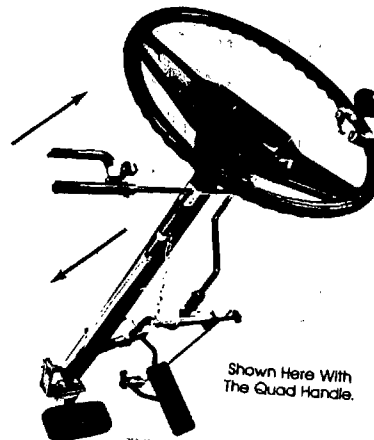


- 2) Automatic Back-Up Steering System. Back-up for steering system if engine stalling, fan belts broken or slipping, etc. Warning light indicates system automatically on; manual override.

\*\*\*Target Industries

- 3) Drive-Master Hand Controls. Push to stop; pull to start. Self-installation; does not interfere with foot operation of car. Optional quad handle.

\*\*\*Drive-Master Corp.



- 4) Command Post Console. 'Dashboard' accessory controls and switches mounted in console box fitting beside wheelchair. Quad Console also available; includes remote gearshift as well as dashboard controls.

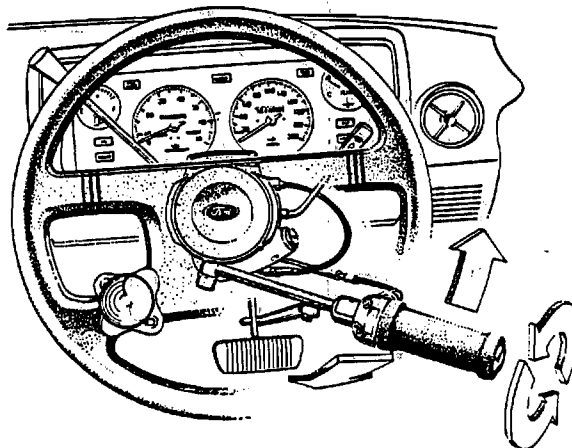
\*\*\*Target Industries

- 5) Extended Steering Column[s]. Manufactured by:

- a) The Braun Corporation
- b) Drive-Master Corp.
- c) Target Industries. Steel; steering column remains collapsible.

- 6) Ford Factory-Fitted Hand Controls. For Falcons and Fairlanes. Motorcycle twist-grip; optional lifting-action control requiring less strength.

\*\*\*Ford Motor Co.

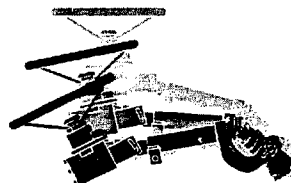


- 7) Hand Controls and Assist Devices. Include hand-operated clutch or brake; left hand shift lever; right hand turn signal; gear shift extensions for use with steering column extensions; and right or left hand controls system with horn button.

\*\*\*Wright-Way

- 8) Horizontal Steering. Motorized articulating steering column; adaptable to all driving devices. Safety clutch; operates in any position.

\*\*\*Target Industries



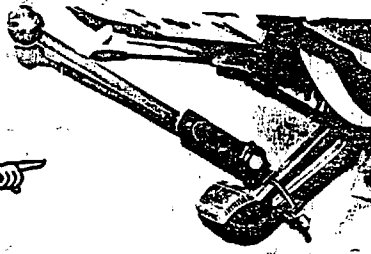


- 9) Left-Foot Gas-Feed. Accelerator pedal attaches to left side of driver's floor. Adjustable.

\*\*\*Wells-Engberg

- 10) Parking Brake Extension. Attaches to foot-operated parking brake. No drilling required to attach.

\*\*\*Nelson Medical Products

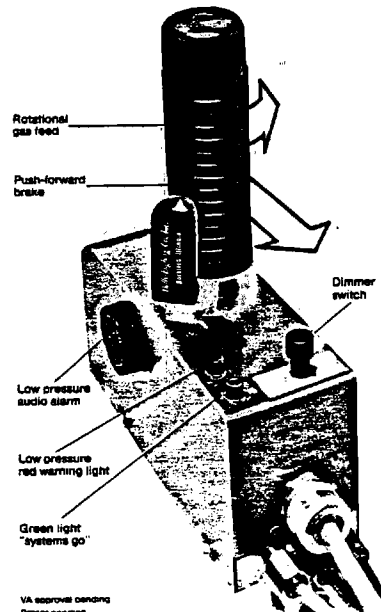


- 11) Parking Brake Handle. Folds forward to easy entrance and exit.

\*\*\*Wells-Engberg

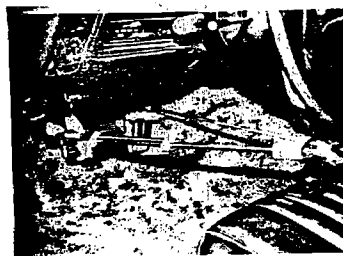
- 12) Pneumatic Hand Control. Detachable control box. Warning lights and alarm as well as "system go" light. Can brake and accelerate at same time. Push-pull unit, raised floor pedals unit options.

\*\*\*Wells-Engberg



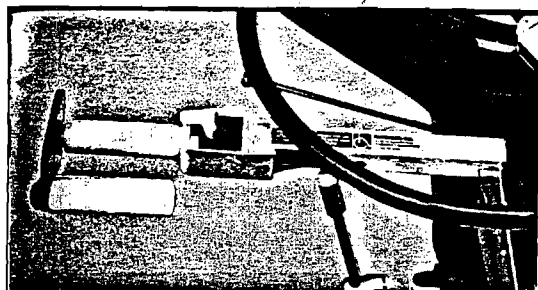
- 13) Portable Control. Attaches to pedals. Requires strong arms and hands to use.

\*\*\*Handicaps, Inc.



- 14) Quad Driving Control. Wrist support adapter for hand control system.

\*\*\*Handicaps, Inc.

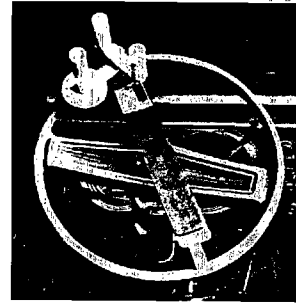


- 15) Slim Line Controls. Left or right hand units; brake and throttle or throttle or brake only. Optional quad grip.

\*\*\*Gresham Driving Aids, Inc.

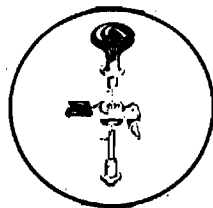
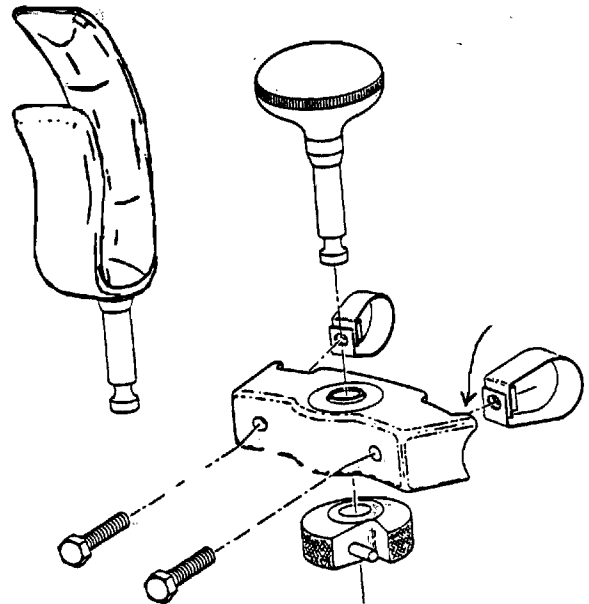
- 16) Spinners. Manufactured by:

- a) The Braun Corporation.  
Rotate on steering wheel platform; Tufted Palm Grip with hand brace; V-Grip with plastic handle cylinder; standard model Spinner Knob; Tri Pin grasps hand at wrist (pictured).



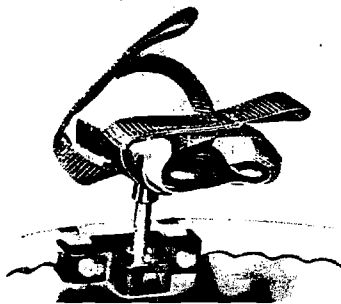
- b) Gresham Driving Aids, Inc.  
5-second removable Spinner Knob; Flat Quad Spinner; Amputee Ring; Upright Quad Spinner, u-shaped; and Tri-Post Spinner models.

- c) Manufacturing and Protection Services Corporation.  
U-shaped and knob spinners.



- d) Nelson Medical Products.  
Open-top; knob; ring; post; yoke and push-button removeable knob (pictured).

- e) Wright-Way.  
Round; Vertical Quad; Horizontal Quad; Ring;  
Tri-Pin; and Quad Strap Knob (pictured) models.



- 17) Vacuum Brake and Gas. Adjustable, control devices-adaptable mechanism. Low operating force required; designed for individual unable to use conventional hand controls. Emergency vacuum pump for throttle and brake back-up; automatic back-up braking system.  
\*\*\*Target Industries
- 18) Zero Effort Steering. Uses standard power steering pump; requires 8 oz. effort.  
\*\*\*Target Industries

- Lifts - 1) ABC Lift. Works within parking space. Side of van, swing exit. Chest-high control bar/guard rail assembly. Exterior control panel also. Electric, non-hydraulic. For Ford and Chevrolet vans. 12-month warranty.  
\*\*\*Crow River Industries, Inc.
- 2) Braun Lift-A-Way. For rear or side exits. Control box may be mounted or held. Free-floating bridge plate. Electric, hydraulic. Safety-stop. Fits all vans.  
Braun Lifter. Same as above, but with manual folding/unfolding ramp.  
\*\*\*The Braun Corporation
- 3) Freewheel "2000". Uses van doors as lift platform. Push-button controls. Fits Dodge, Chevrolet and Ford sliding-side door vans. Electric.  
\*\*\*Freewheel Vans, Inc.
- 4) Golden Boy II. Also available in junior children's model. Side of van, swing exit. Automatic wheel-stop, manual back-up system. Control bar, guard-rail assembly. Parking space fit. 12-month warranty. Electric, non-hydraulic.  
\*\*\*Golden Boy Sales Corp.
- 5) Magnetic Door and Lift System. For person who cannot use key. Securable from unauthorized use. Less vulnerable to damage by vandals.  
\*\*\*Target Industries
- 6) Pulsar Remote Controls. Single-button operation. Hydraulic and electric models. Fit Ricon, ABC, Braun, Collins, Target; customer controls also available.  
\*\*\*Pulsar Digital Systems
- 7) Ricon R30 Wheelchair Lift. For rear or side exit. Exterior and control bar controls. Electric, non-hydraulic. Uses car battery. Emergency release, manual control provisions. Platform cannot fold when holding more than 50 lbs. Remote control, switch covers and locks optional. 12-month warranty  
\*\*\*Ricon Sales Inc.

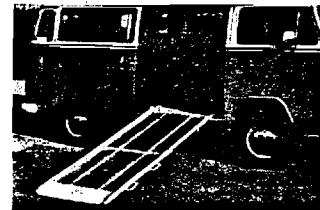
- 8) Safety Van Lift-II. Side of van, swing exit can be used within parking space area. Control bar/guard rail and exterior switches. Hydraulic; uses van battery. Fully and semi-automatic models. Fits all American-made vans.  
\*\*\*Total Mobility Systems & Designs, Inc.
- 9) SAF-T-LIFT.  
\*\*\*Collins Industries, Inc.
- 10) Superarm Lift. No platform. Nylon rope and adjustable rings hold wheelchair from chest-high bar. Operating switch on lift arm. Electric, non-hydraulic, uses van battery.  
\*\*\*Handicaps, Inc.
- 11) Superlift. All electric, uses van battery. Manual folding and unfolding of platform can be performed by wheelchair user. Flip-Down option to move platform from side window of van.  
\*\*\*Handicaps, Inc.
- 12) Swinger Rotary Lift. Exterior and on-lift controls. Front and back automatic safety stops to prevent wheelchair rolling. Chest-high guard rail. Manual override. Magnet drive.  
\*\*\*Drive-Master
- 13) Target T500 Dual Entry Automatic Lift. Large platform. Exterior, on-lift and driver position controls. Automatic end-stop. Single-cylinder hydraulic system uses 12-volt van battery.  
\*\*\*Target Industries
- 14) Vangator. Platform folds in half inside stepwell. Rear or side door exit, rotating platform. Electric, non-hydraulic. Fits all vans.  
\*\*\*Crow River Industries, Inc.
- 15) Wheelchair Lift. Side or rear exit. Manual or or control switch-operated doors. On-lift switches. Safety stops. Wrench-assisted manual override.  
\*\*\*P & Q Lifts, Inc.

- Miscellaney - 1) Braun Chair Topper. Fits economy or standard cars. Uses car's 12-volt battery. Lifts folded wheelchair in 30 seconds. 57" X 51" X 18" high.

\*\*\*The Braun Corporation

- 2) Clearance Signs. Van sign is vinyl with adhesive back; car sign hangs in car window.

\*\*\*Fred Sammons, Inc.



- 3) Econo-Ramp. Fits rear or side opening, any van. Lightweight, folds for storage.

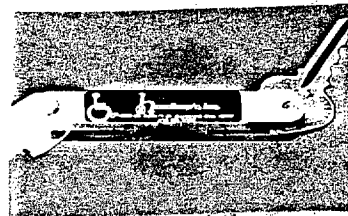
\*\*\*Collins Industries, Inc.

- 4) Emergency Help Sign. "Need Aid" sign attaches to driver's window facing rear traffic.

\*\*\*Handicaps, Inc.

- 5) Key Turners. 4" or 10" lengths.

\*\*\*Wright-Way



- 6) Pulsar. Remote control activates car by frequency code. Will run car for 12 minutes; will deactivate after 15 seconds if car will not start.

\*\*\*Pulsar Digital Systems

- 7) Remotostart. Built-in burglar alarm. Works from 400' away.

\*\*\*Drive-Master

- 8) Quad Key Turners. 4" and 8" lengths.

\*\*\*Handicaps, Inc.

- 9) Smooth Floor Covering. Luan mahogany plywood for covering ridges in factory metal floors in vans.

\*\*\*Drive-Master

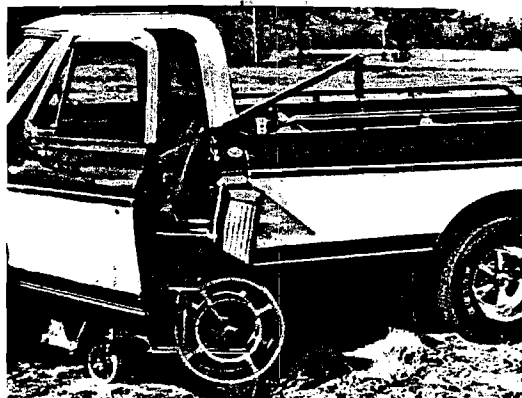
- 10) Van Tops. From:

- a) Drive Master - White fiberglass. 6'; 5' 4"; and 5' headroom sizes. Raised door openings also sold.
- b) Target Industries - White fiberglass top. 24" or 12" additional room. Raised door openings also available.
- c) Viking Van Tops - Sport; Camper and Mid-size models. Various styles.
- d) Wright-Way - Mini, 12", and Camper, 26", models. Raised doors also sold (shown).



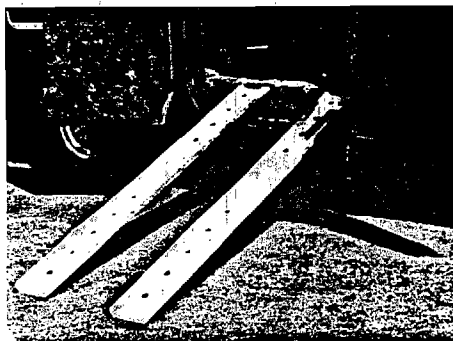
- 11) Wheelchair Loader. Puts manual, folded wheelchair behind front seats of car. Uses car's battery. Also available for pick-up trucks. Pick-up loader also sold in do-it-yourself kit.

\*\*\*Wright-Way



12) Wheelchair Ramp. Portable.

\*\*\*Wright-Way



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The following companies do van  
conversion work in the Atlanta  
area:

Handicaps Mobility Systems, Inc.

4172 Railraod Avenue

Tucker GA

493-6870

R & R Van Lift Sales & Service

1126 Old Covington Highway SE

Conyers GA

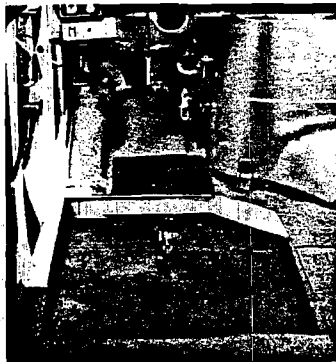
483-0767



Seating - A) Accessories

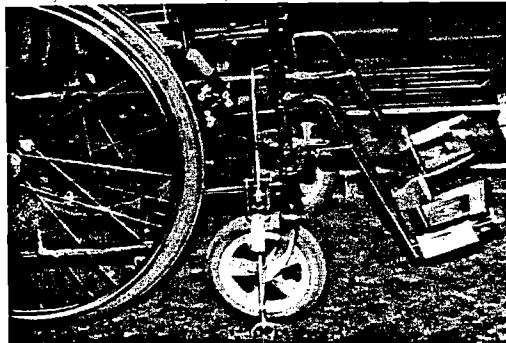
- 1) Automatic Wheelchair Lock. Quad-operable, non-electric. Keeps wheelchair immobile in driving position.  
\*\*\*Drive-Master
- 2) Drop Floor. Lowers floor 4" full length and width of van. Power Floor elevator will lower driver's wheelchair area to 6" depth.  
\*\*\*Drive-Master
- 3) Power Floor Elevator. Includes center restraint device.

\*\*\*Wright-Way



- 4) Securement Systems. 3-Point and 4-Point systems- straps attach at 3 or 4 separate points of wheelchair. Separate lap restraint belt. Includes belts and floor-mount bolt-down track. Components also sold individually.  
\*\*\*Crow River Industries, Inc.
- 5) Tie-Downs. Universal nylon strap quick-release; Ferno-Washington recessed center floor mount; Cam Lock over the center rear lock device; and Over the Center front mechanical style (pictured) models.

\*\*\*Wright-Way



- 6) Tie-Downs. Single wheel, double wheel bars and center "T" tie-downs.

\*\*\*Crow River Industries, Inc.

- 7) Transfer Bar. Behind driver and passenger seats.

\*\*\*Wright-Way



- 8) Upper Torso Restraint. For both wheelchair and van seats.

\*\*\*Wright-Way

- 9) Wheelchair Cups. Lower wheelchair height approximately 2". Prevent rocking.

\*\*\*Wright-Way

- 10) Wheelchair Seatbelt Holdown. Long seatbelts tie through armrests. Angle iron prevents chair rocking.

\*\*\*Handicaps, Inc.

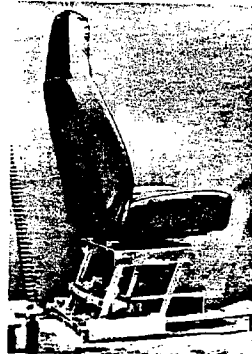
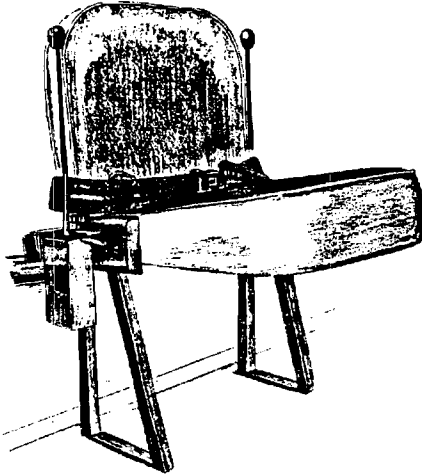
- 11) Wheelwells. Lower height of wheelchair 1 1/2" to 2".

\*\*\*Handicaps, Inc.

B) Seats

- 1) Flip-Seat. Seat folds up to hold wheelchair by both wheels. Has own seatbelt.

\*\*\*Collins Industries, Inc.

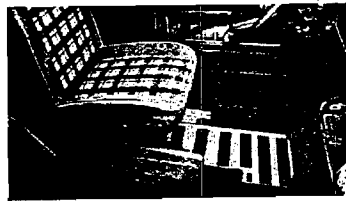


- 2) 4-Way Power Seat. Forward/back, up/down. Swivel option.

\*\*\*Wright-Way

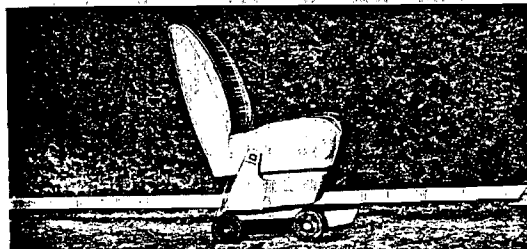
- 3) Power SAF-T-Seat. Uses van seat. Electrical track uses van's 12-volt battery. Remote control unit for forward/back movement. Optional Swivel Seat and Carrier (shown) for feet and legs.

\*\*\*Collins Industries, Inc.



- 4) Roll-Away Seat. Track permits driving from van seat or wheelchair. Buyer must supply seat.

\*\*\*Wright-Way



- 5) 6-Way Power Seat. Single-wire connection.  
360° swivel. Independent height adjustment.  
\*\*\*Target Industries
- 6) TransSeat. Forward/back movement. Bolted  
track. Electric. Transfer bar option.  
\*\*\*Fred Scott & Sons

## MANUFACTURERS LIST

for products listed in Catalogs of Commonly-Used Products  
for Blind, Deaf, Deaf-Blind and Spinal Cord Injured Persons

### A & B Home & Office Products

2305 North Fifth; Niles MI 49120  
616-683-5757

### ACTIVEaid, Inc.

501 East Tin Street; Redwood Falls MN 56283  
800-533-5330

### Adlib, Inc.

PO Box 905; Lakewood CA 90714  
213-420-9448

### American Communications Corp.

180 Roberts Street; East Hartford CT 06108  
203-289-3491 (voice or TTY)

### American Printing House for the Blind

1839 Frankfort Avenue; PO Box 6058; Louisville KY 40206  
502-895-2405

### Ampli-Sound - Terrad Enterprises, Inc.

One Lincoln Plaza; New York NY 10023  
212-787-5452

### Ange Company

1743 Yosemite Drive; Milpitas CA 95035  
408-263-0359

### Applied Communications Corp.

517 C Marine View Avenue; PO Box 555; Belmont CA 94002  
415-592-1622 voice  
415-592-1623 TTY

### Automated Data Systems, Inc.

PO Box 4062; Madison WI 53711  
608-257-1911

### Ballert Orthopedic Corp.

2445 West Peterson Avenue; Chicago IL 60659  
312-878-2445

### Beneficial Designs, Inc.

5858 Empire Grade; Santa Cruz CA 95060

### Be OK - Fred Sammons, Inc.

Box 32; Brookfield IL 60513  
800-323-7305

The Braun Corporation

13710 49th Street North; Clearwater FL 33520  
813-576-2737

Canon USA, Inc.

6380 Peachtree Industrial Boulevard; Norcross GA 30071  
404-448-1430

Harriet Carter

Department 62; Plymouth Meeting PA 19462

Carters (J&A) Limited

Alfred Street; Westbury Wilts BA 133DZ, G.B.

Century Manufacturing Company

Industrial Park; Aurora NE 68818  
402-694-2196

Toby Churchill, Ltd.

20 Panton Street; Cambridge, England CB 21 HP

Collins Industries, Inc. - Special Products Division

Box 58; Hutchinson KS 67501  
316-663-4441

ConMed Equipment Corp.

1262 White Oak Road; Westfield NJ 07090  
201-232-1205

Consumer Care Products, Inc.

6405 Paradise Lane; Sheboygan Falls WI 53085  
414-467-2393

Joan Cook

3200 S.E. 14 Avenue; PO Box 21628; Ft. Lauderdale FL 33335

C-Phone, Inc.

553 Wolfner Drive; Fenton MO 63026  
314-343-5883 (voice or TTY)

Crow River Industries, Inc.

1415 East Wayzata Boulevard; Wayzata MN 55391  
800-328-3632

Damaco, Inc.

9612 Lurlene Avenue, Unit A; Chatsworth CA 91311  
213-709-4534

Danmar Products, Inc.

2390 Winewood Avenue; Ann Arbor MI 48103  
313-761-1990

D. B. Products Company

PO Box 216; Nehalem OR 97131  
503-368-6735

De Blindas Forenings Forsaljning Saktiebolag

Sandsborgsvagen 56; S-12 233 Enskede; Sweden

Deutsche Blindenstudienanstalt

Am Schlag 8; 3550 Marburg (Lahn); West Germany

Devices for the Hearing Impaired

2801 Berry Street; Sioux City IA 51103

Dialogue Publications, Inc.

3100 Dak Park Avenue; Berwyn IL 60402

Walter Drake & Sons

Drake Building; Colorado Springs CO 80901

Duro-Med Industries, Inc.

138 Kansas Street; Hackensack NJ 07602  
800-526-4753

Edmund Scientific

101 East Gloricester Pike; Barrington NJ 08007

Exit-Us, Inc.

Box 285; Easton CT 06612

Fashion Able

PO Box "S"; Rocky Hill NJ 08553  
609-921-2563

William Feinbloom, O.D. Ph.D.

138 East 36th Street; New York NY 10016

The Felix Company - Helping Hands Divison

9 Rice's Lane; Westport CT 06880

Fishburne Engineering

221 North Gordon Drive; Winston-Salem NC 27104  
919-765-2928

Flashing Systems, Inc.

PO Box 6146; Silver Springs MD 20906  
301-593-2755

Ford Motor CompanyFreewheel Vans, Inc.

16002 West Fourth Avenue; Golden CO 80401  
303-278-2972

Garelick Manufacturing Company

644 Second Street; St. Paul MN 55071  
612-459-9795

Golden Boy Sales Corp.

2920 West Central; Santa Ana CA 92704  
714-957-8581

Hal-Hen

36-14 11th Street; Long Island City NY 11106  
212-392-6020

Handicaps, Inc.

4335 South Santa Fe Drive; Englewood CO 80110  
303-781-2062

Dave Harrison Products

104 South Smythe; PO Box 1704; Bowie TX 76230  
800-772-0845

Hausman

130 Union Street; Northvale NJ 07647  
201-767-0255



HC Electronics

250 Camino Alto; Mill Valley CA 94941

Hein-A-Ken Corp.

532 South Maple; Thief River Falls MN 56701  
218-681-7420

Homecraft

27 Trinity Road; London SW17 75F England  
phone 01-672-7070/1789

Howe Press of Perkins School for the Blind

175 North Beacon Street; Watertown MA 02172

Huntleigh - c/o W. Andrew Shore

5120 Hensley Drive; Dunwoody GA 30338  
404-394-9691

IBM Corp. - Office Products Divison

Parson's Pond Drive; Franklin Lakes NJ 07417

Independent Living Aids, Inc.

11 Commercial Court; Plainview NJ 11803

Independent Transfer Equipment Corp.

11602 Knott Avenue; Garden Grove CA 92641  
714-898-9005

Innocomp

1121 Vegas Court; Charlottesville VA 22901  
804-296-4805 or 804-924-3781

Mrs. Betty Jo Keitzer

1129 Peninsula Drive; Lake Wales FL 33853  
813-676-1805

Helen Keller National Center - Research Department

11 Middle Neck Road; Sands Point NY 11050  
516-944-8900

Krown Research, Inc.

6300 Arizona Circle; Los Angeles CA 90045  
213-641-4306

Lamison & Goodnow Manufacturing Company

PO Box 128; Shelburne Falls MS 01370

Learning Technology Institute

50 Culpepper Street; Warrenton VA 22186

Lumex

100 Spence Street; Bay Shore NY 11706  
516-273-2200

Luminaud, Inc.

7670 Acacia Avenue; Mentor OH 44060  
216-255-9082

Maddak, Inc.

6 Industrial Road; Pequannock NJ 07440  
201-694-0500

Madison Pouch Company

PO Box 9294; Madison WI 53715

Maryland Computer Services

2010 Rock Springs Road; Forest Hill MD 21050  
301-838-8888

Med, Inc. - AARO Medical Service

1010 Laurens Road; Greenville SC 29607  
803-242-6791

Medfurn - Design Controls, Inc.

40-70 Delong Street; Flushing NY 11354  
800-847-4018

Medi, Inc.

27 Maple Avenue; Holbrook MS 02343  
617-767-1232

Medical Engineering Club, Western Electric Company

Hawthorne Works; Chicago IL 60657

Medoc

12129 Roxie Drive; Round Rock TX 78664

Miya Epoch

1635 Crenshaw Boulevard; Torrence CA 90501  
213-320-1172

Modular Medical Corp.

1558 Hutchinson River Parkway East; Bronx NY 10461  
212-829-2626

Motorolla Corp. - Atlanta Service Center

South Perimeter Highway; College Park 30339  
404-996-4548

National Federation of the Blind

218 Randolph Hotel Building; Fourth & Court Streets;  
Des Moines IA 50309

The National Institute for Rehabilitation Engineering

238 Poplar Avenue; Pompton Lakes NJ 07442

Nelson Medical Products

5690 Sarah Avenue; Sarasota FL 33583-9510  
813-924-2058

Oregon Chapter #31, Telephone Pioneers of America

421 S.W. Oak Street; Room 107; Portland OR 97204

Orthopop

PO Box 272; Aptos CA 95003  
408-688-6272

Phone-TTY, Inc.

14-25 Plaza Road; Fair Lawn NJ 07410  
201-796-5414 (voice or TTY)

Plantronics

345 Encinal Street; Santa Cruz CA 95060  
408-426-5358 (voice)  
800-538-0748 (TTY)

Preston Corp.

60 Page Road; Clifton NJ 07012  
201-777-2700

Printronic, Inc.

17421 Derian Avenue; PO Box 19559; Irvine CA 92713

Projeckt AB ALEA

Henriksbergsvagen 104; S-136 67 Handen; Switzerland

PSI

125 Columbia Court; Chaska MN 55318  
612-448-6987

Pulsar Digital Systems

PO Box 2706; Culver City CA 90230  
213-996-0822 or 213-822-8820

Rehabilitation Engineering Center, Children's Hospital at  
Stanford

520 Willow Road; Palo Alto CA 94304  
415-327-4800 X 345

Rehabilitation Engineering Center, Smith-Kettlewell

2232 Webster Street; San Francisco CA 94115

RFSU Rehab

Box 17006; S-10462 stockholm 17; Sweden

Ricon Sales, Inc.

11684 Tuxford Street; Sun Valley CA 91352  
213-768-5890

ROHO Research & Development, Inc.

PO Box 866; East St. Louis IL 62203  
800-851-3449  
Telex 44-7629

Royal National Institute of the Blind

224 Great Portland Street; London Win. 6AA, England

Fred Sammons, Inc.

see Be OK

Science Products for the Blind

Box 385; Wayne PA 19087

Scimedics, Inc.

700 North Valley Street, Suite B; Anaheim CA 92801  
714-991-5340 or 213-860-1056

Fred Scott & Sons

101 Kelly Street; Elk Grove IL 60007  
312-437-7666

Sensory Aids Evaluation & Development Center, MIT

77 Massachusetts Avenue; Cambridge MA 02139

Sharp

10 Keystone Place; Paramus NJ 07652

George H. Snyder

5809 N.E. 21 Avenue; Ft. Lauderdale FL 33308

Sonteck Medical, Inc.

31 Fletcher Avenue; PO Box 549; Lexington MA 02173

Sound Associates

424 West 45th Street; New York NY j0036  
212-757-5679

Sound Barrier, Inc.

401-417 Fayette Avenue; Springfield IL 62704  
217-753-2505 (voice or TTY)

Soundcasters - Audio-Visual Specialities

Box 811; Wheaton IL 60187  
312-682-0280

Spanners

16 Boulevard East 108, Suite 306; Orange CA 92666

SSI of Georgia

1250 Womack Avenue; East Point GA 30344  
404-753-3121 (voice)  
404-755-0256 (TTY)

Stanley

Scott Swamp Road; Farmington CT 06032

Hugh Steeper Ltd.

237-239 Roehampton Lane; London SW15 4LB, England

Talos Systems, Inc.

7419 East Helm Drive; Scottsdale AZ 85260  
602-948-6540

Target Industries

1080 Morrison Drive; Charleston SC 29403  
803-723-1514

TASH - c/o Sunnybrooke Medcial Centre  
2075 Bayview Avenue; Toronto Ontario M4N 3M5

Telesensory Systems, Inc.

3408 Hillview Avenue; PO Box 10099; Palo Alto CA 94350  
415-493-2626  
Telex 348352 TSI PLA

or: 2112 Statute Lane; Vienna VA 22180  
703-281-0889

Tergo Corp.

PO Box 902; Garden Grove CA 92640  
714-898-9005

Theracare - Medline Industries, Inc.

1825 Shermer Road; Northbrook IL 60062

Theradyne Corp.

21730 Hanover Street; Lakeville MN 55044

Timson Ltd.

25 Haymarket; London SW1Y 4EN, England

Total Mobility Systems & Designs, Inc.

4060 Stewart Road; Eugene OR 97402  
503-686-9706

Traylor Enterprises, Inc.

830 N.E. Loop 410, Suite 505; San Antonio TX 78209  
512-828-0203

Triformation Systems, Inc.

3132 S.E. Jay Street; Stuart FL 33494  
305-283-4817

Typewriting Institute for the Handicapped

3102 West Augusta Avenue; Phoenix AZ 85021  
602-939-5344

Ulico, Inc.

1300 Venice; Dearborn MI 48124  
313-336-8716

Ultratec, Inc.

PO Box 4062; Madison WI 53711  
608-273-0707 (voice or TTY)

Variable Speed Control Corp.

185 Berry Street; San Francisco CA 94107  
415-495-6100

G.T. Water Products, Inc.

19438 Business Center Drive; Northridge CA 91324  
213-349-8040

Weitbrecht Communications, Inc.

655 Skyway, Suite 230; San Carlos CA 94070  
415-592-1622 (voice)  
415-592-1623 (TTY)

Wilson Wheel & Tire Company

31131 Via Colinas, Suite 604; Westlake Village CA 91361  
213-707-1780

Woodrow Wilson Rehabilitation Center

Rehabilitation Engineering Services; Fishersville VA 22939

Winsford Products, Inc.

179 Pennington-Harbourton Road; Pennington NJ 08534

Wormald International Sensory Aids, Ltd.

White Plains Office Center, Suite 110, 205 West Grand Avenue;  
Bensenville IL 60106

Wright-Way

175 East Interstate 30; PO Box 40907; Garland TX 75040  
214-271-2488



Center for Rehabilitation Technology

College of Architecture  
Georgia Institute of Technology  
Atlanta, Georgia 30332

(404) 894-4960

December 15, 1983

Dear DRS Counselor:

Enclosed you will find a supplemental guide on adaptive aids and devices. The CRT has put together this supplement in response to information requested on the questionnaire you returned to us during our survey. You will find many applicable products in this guide and in the manual on adaptive aids and devices supplied to you previously.

If you need further information or adaptive equipment assistance with any of your clients on an individual basis, please call the CRT office at 894-3476 (after January 1, call 404-894-4960).



Office of Interdisciplinary Programs  
Georgia Institute of Technology  
A Unit of the University System of Georgia

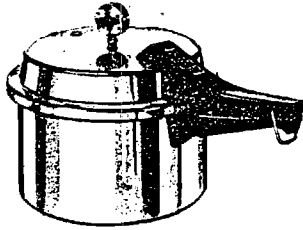


## HOUSEKEEPING

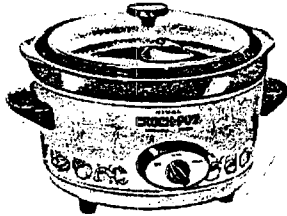
### SUPPLEMENT

#### APPLIANCES

Mirro-Matic Pressure Cooker. Audible [bouncing weight] pressure signal. 5, 10 and 15 lbs. pressure; safety fuse for vent-pipe clogs. Includes trivet. In 4-qt. and 6-qt. sizes. UL approved.

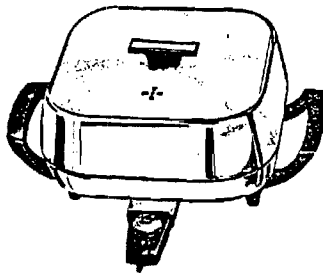


Poly Perk Electric Coffee Maker. Lock-lid top; break-proof polypropylene. Makes 2 to 4 cups. UL approved.



Rival Crock Pot. Audible click control. Removable crock. 5-qt. capacity; 3 settings. UL approved.

Sunbeam Electric Multi-Cooker Frypan. Audible click control; 8 settings. High-dome cover for roasts, etc. Pedestal legs; buffet styling; removable control. UL approved.



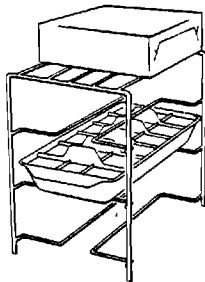
\*All the above appliances are available from Independent Living Aids, Inc.  
11 Commercial Court  
Plainview NY 11803  
516-681-8288

## ORGANIZERS

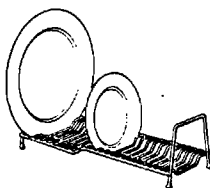
Grayline Products. Order from Grayline Housewares; 312-695-3900;  
1616 Berkley Street; Elgin IL 60120.



**No. 218  
GRAYLINE LID AND TRAY RACK**  
Six section rack provides convenient and accessible storage for bulky dome-shaped lids, serving trays, baking sheets, pie and cake tins, muffin tins, etc. Cushion-coated. 11 1/2" long, 7 3/4" wide, 7" high.



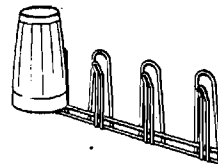
**No. 234  
GRAYLINE ICE-CUBE TRAY  
STACKER**  
Holds four ice-cube trays, or three trays and frozen foods. Trays slide freely, will not stick, cushion-coated. 9" long, 5 1/2" wide, 7 3/4" high.



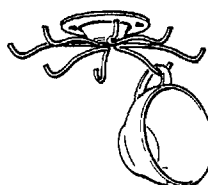
**No. 214  
GRAYLINE PLATE RACK.** For draining or storage. New design holds dishes separately in vinyl cushioned dividers for easy selection. Compact size saves space.



**No. 211  
GRAYLINE CUP STACKER.** Holds up to 6 cups safely in space saving convenience. Easy to pick up and carry. Sturdy wire with cushion-coating.



**No. 401  
GRAYLINE GLASS HOLDER.**  
Holds 4 glasses firmly with cushion-coated wire clips. Sure grip vinyl protection, no scratching. Fastens to inside of cupboard door or any wall (wood or steel) with screws provided. 11" long, 4" high.



**No. 802  
GRAYLINE REVOLVING CUP  
RACK.** Holds 8 cups safely in otherwise wasted space. Vinyl coated wire arms turn smoothly at a touch. Guaranteed never to wobble or work loose. Fastens to underside of wood or steel shelf with screws provided. 5 1/4" dia., 1" high.

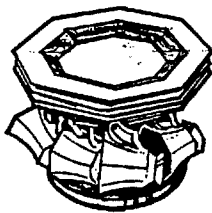
Rubbermaid Products. Check with your local hardware or department store. No mail order available.

### **Single and Twin Turntables**

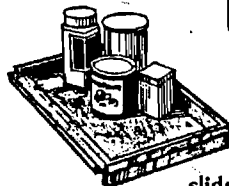
A slight touch spins spices and other condiments into easy reach; turntables help organize refrigerators, too.



**Storage Turntable**  
Revolves in base cabinets to swing kitchen supplies front and center.



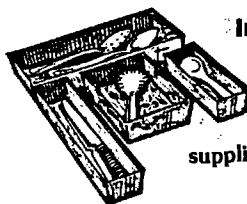
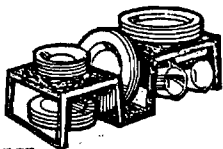
**Cup 'n Plate Carousel**  
Top section holds dinner or salad plates; cups hang from hooks below.



**Slide-Out Drawers**  
These attach to base cabinets or shelves and slide forward, bringing hard-to-reach supplies up front. One drawer mounts above another with a slide-out drawer stacking kit. Drawers come in 12" and 16" widths.

### **Dinnerware Rack**

Organizes saucers, dinner and salad plates and has a slide out cup hook section.



### **Instant Drawer Organizers**

Four sizes interlock to separate gadgets, sewing supplies, small tools and other goods.

## UTENSILS & TOOLS

Adjustable Frozen Food Label Holders. Elastic band with metal plate for magnetic labels. 2 "D" ring adjustments.

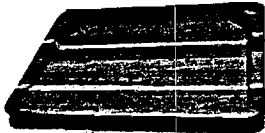
Order from:  
Mrs. Bernecie Johnson  
717 4th Street, Apt. 114  
Des Moines IA 50309

Cooking Basket. Strains contents as they are lifted. Large wooden handle.

Order from: Homecraft  
27 Trinity Road  
London SW17 7SF  
Phone: 01-672 7070/1789



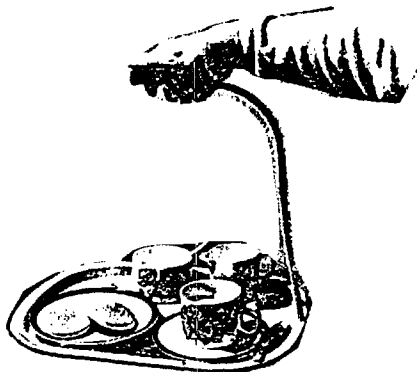
Cutting Board with Rim. Slanted surface; 2 nails hold vegetables and meat. Northern hardwood. 12 X 16".



Order from: Fred Sammons  
Box 32  
Brookfield IL 60513-0032  
Phone: 800-323-5547

Dycem Non-Slip Freehand Tray. Objects on surface of tray will not slide if angled, if surface is clean and dry.

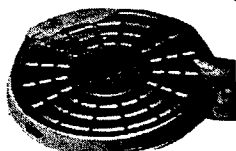
Order from: Homecraft (see above)



## UTENSILS & TOOLS CONT.

Flame Tamer. 8" round aluminum disc acts as double boiler; grooves hold disc; indented surfaces reduces pan slippage.

Order from: American Foundation for the Blind  
15 West 16th Street  
New York NY 10011  
212-620-2172



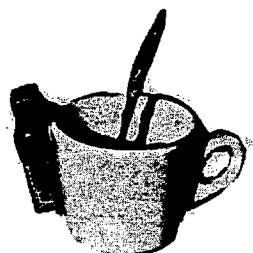
Flame Tamer/Heat Diffuser. Controls gas stove burner flames. Prevents sticking, scorching, boil-overs. Wood handle.

Order from: Science Products for the Blind  
Box 385  
Wayne PA 19087



Liquid Level Indicator. Electronic device hangs over the lip of glass or cup; buzzes and vibrates when liquid nears top. Uses 9-V battery.

Order from: American Foundation for the Blind



Milk Saver. Heat-proof glass disc vibrates when liquids begin to boil.

Order from: Homecraft (see above)



# AIDS AND APPLIANCES REVIEW

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## Kitchen Aids: Resources for the Visually Impaired Cook

by Mary Beth Caruso

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#### PREFACE

Guest writer Mary Beth Caruso is Supervisor of Rehabilitation Teachers for Region III of the Massachusetts Commission for the Blind. She holds a B.A. degree in Elementary Education/Special Education from Boston College; recently earned an M.Ed. degree in Rehabilitation Teaching for the Visually Impaired from Boston College.

#### Acknowledgments

For the preparation of this issue, research into the area of aids and appliances for the kitchen included exploration of resources and compilation of data from surveys of consumers and deliverers of services to the blind. The survey was designed to gather descriptions of individual experiences with devices which can make work in the kitchen possible, easy, and even fun. Thanks are extended to those who responded to the survey as well as to the review team members: Faye Berube, Nancy Campbell, Maureen Ecker, Susan Gange, and Margaret Potter. Their task was to provide a reader's response from the different points of view of blindness rehabilitation and home economics. Their comments helped to broaden the perspective of this issue.

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## Introduction

The kitchen is the one room in the house that is imbedded with rich traditions. Ethnic background, family upbringing, geographical location, and taste, both acquired and inbred, all intertwine in the methods, techniques, and equipment used in food preparation. Thousands of books have been written about cooking and all that is associated with food preparation. This issue of AAR does not attempt to cover all the techniques appropriate to various cuisines or even all the adaptive techniques and devices beneficial to visually impaired cooks. It attempts, however, to present the most commonly used aids designed for the visually impaired and some alternative uses for everyday cookware. Individual experience, creativity, and flexibility are the best resources for adapting to cooking with a vision loss. It is hoped that our presentation will inspire others to share their resources and experience.

The following text is divided into sections dealing with the various aspects of kitchen management and food preparation. A resource guide follows sections where appropriate. Each resource guide is a sampling of the types of aids explained within the text. For simplicity, many of the common use items have been selected from national mail order houses; however, most of these items are also commercially available in local retail stores. The modified or adapted aids listed are available from distributors, nationally and internationally, who specialize in aids and appliances for the visually impaired and blind individual.

## KITCHEN ORGANIZATION

Methods of organization are of major importance for a visually impaired person to be safe and efficient in the kitchen. The lack of organization can result in so much frustration for the visually impaired homemaker that meal preparation becomes a dreaded task. But the proper arrangement of equipment, cabinets, and supplies to best utilize the available space can make work in the kitchen enjoyable. This arrangement should take into account the individual's own needs and abilities as well as those of other family members.

The extent and nature of the vision loss will help determine the individual's needs for special techniques and devices for organization. Blindness can restrict the person's ability to locate needed equipment, proper work areas, and supplies by interfering with or eliminating the ability to use visual reference within the kitchen environment. Many people cannot rely on visual cues to perceive how they relate to space and objects or to detect where objects are located in space. This loss imposes specific limits on the person's ability to interact with the kitchen environment in order to prepare food safely and efficiently while maintaining cleanliness. Therefore, devices or techniques which can enhance nonvisual organizational systems must be sought. While tactual methods are a major approach for locating items and determining how they relate to other items, in the kitchen environment they may not be appropriate. Because heat sources and sharp and pointed edged utensils are major components in food preparation, direct tactual methods

can present problems of comfort or safety and must be supplemented by other tools, devices, and techniques that can provide solutions to the problems of performing tasks in the kitchen. Organization is the basic technique that makes the kitchen and its tools and supplies accessible to the visually impaired cook, and it consists of both techniques and special devices.

## Kitchen Layout

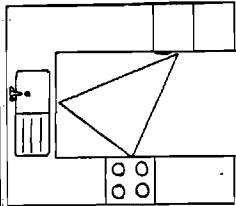
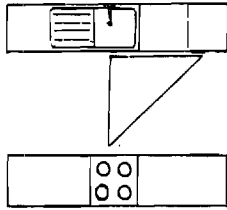
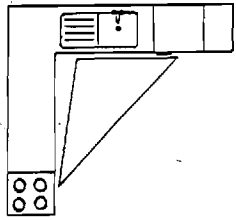
"Organization" refers to planning steps of a task in proper sequence, to arranging materials and equipment for optimal efficiency, or to ordering items within storage area for easy removal and replacement. In the kitchen the principle of ordering things for proper functioning can be begun with the major components of the environment — counter space, storage space, refrigerator, sink, and cooking facilities. If possible, organization should prevail in the initial setup of these kitchen areas.

If the kitchen is lacking in existing countertops, butcher block tables on wheels or rolling carts can add surfaces for work space when moved from some convenient storage space (some even fold up) to the work site, then to serving and finally the clean-up area. A supplemental stationary work area can be made by cutting a board to cover half the sink or to fit snugly over an open drawer. Shelves that drop down from the wall can create a work area that can be out of the way when not in use.

For smooth functioning in food preparation, service, and clean-up, counterspace and other kitchen equipment should be arranged to support the sequence of steps involved in these tasks. *The Source Book for the Disabled* (Glory: Hale, ed., Imprint Books, London: 1979; Bantam Edition July 1981; page 180) makes the following recommendation:

"The kitchen layout should, ideally, be based on the three-point work triangle, with the refrigerator, sink and cooking facilities arranged in that order, which follows the sequence of food preparation — food is taken from the refrigerator, washed and put in a pan at the sink and then moved to the stove for cooking. The countertops should be unbroken so that whenever possible hot or heavy items can be slid, rather than carried, from area to area. Kitchen equipment can be arranged in a U-shape, an L-shape or in a corridor shape on two parallel walls."

The illustration on the next page shows three possibilities of setting up an efficient timesaving kitchen with the refrigerator, sink, and cooking facilities being at each of the points of the triangle. Movement should be in the order of food preparation according to the dominant hand. A right-handed person should move from right to left starting at the refrigerator.



*Top Left: L-shape layout.  
Top Right: Corridor layout.  
Bottom Left: U-shape layout.*

## Organized Storage

Many kitchens may not be set up according to the ideal; however, major renovations are not recommended but rather a closer look at modifications in the organization and storage systems already in place. The ability to readily locate, identify, and retrieve needed materials or supplies from storage space can improve working conditions for a visually impaired cook even in a kitchen with a less than ideal layout. Work and storage space for categories of tools and materials should be designed so that the cook can automatically go to the general area in which the specific item or tool is stored. In these general areas, individual items can be arranged in even more detailed patterns of order. Such arrangements may compensate for visual loss which reduces or eradicates the ability to scan a shelf or cupboard for a desired item. To achieve the ideal of creating small patterns of order within special areas of storage, all staples for baking, for example, could be placed in the right-hand section of a shelf so that the cook would know that cornstarch is the second item in a row containing baking soda, cornstarch, confectioner's and brown sugar. Likewise, pots and pans might be stored in a particular order with their lids stored nearby in a corresponding order. For the visually impaired cook, systems of organization are often necessarily more sophisticated than for the sighted cook.

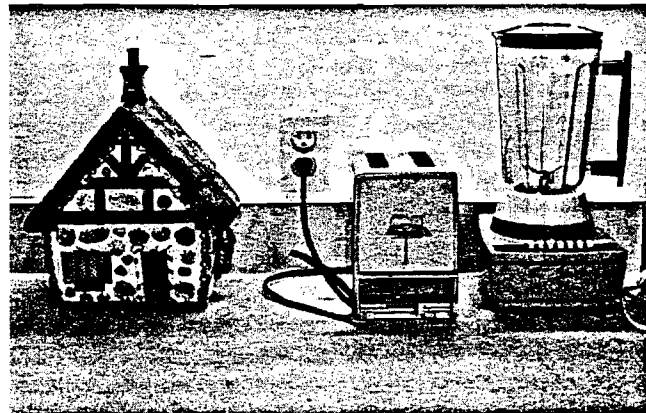
To set up such systems, the first step is to examine the existing space and then assign priorities to the items to go into that space. Materials, equipment and supplies should be located close to where they are first used. The frequency of their use will determine whether they should occupy prime or secondary storage space, which should be within the individual's range of motion. Equipment used frequently such as blenders should not have to be carried far to be plugged in. If there is space on the counter or on an easily accessible shelf near the outlet, small, often used appliances should be located there. For another example, dishes used every day should be stored on shelf space close to everyday

dining areas or to the sink, but extra, seldom used place settings can be located elsewhere. Storage methods on the shelf are also important. Piling up dishes and other dinnerware is dangerous and makes searching and removal difficult.

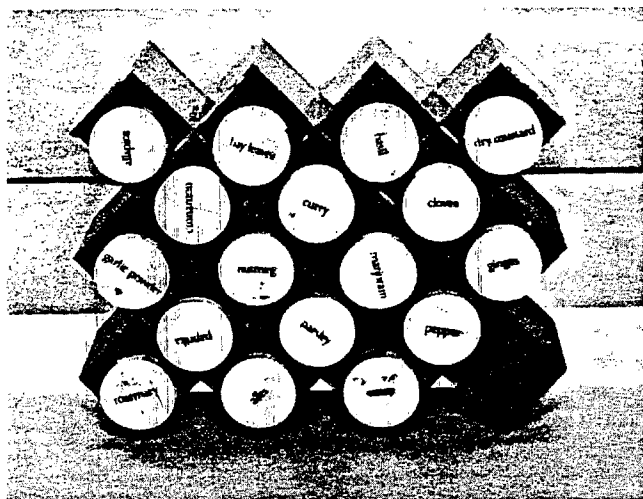
Products called organizers are units designed to further order and separate individual objects within more defined areas. They can prove a useful resource for organizing any kitchen. Consider, for example, how the common flatware tray facilitates setting a table. The tray collects all knives, forks, and spoons in one place but holds them in separate compartments to prevent the problem of sorting through a jumbled drawer full of implements when selecting individual utensils. There are also organizing units for dishes, glassware, pots and pans, and other tools and materials used in the kitchen. Some fit on shelves while others attach underneath shelves. Some are for drawers, while others attach to the back of doors or to refrigerator shelving. They all share a common principle of design: units defining large fixed areas are divided into smaller sections for the storage of individual items or sets of items.

Dish racks that fit on the shelf and are divided into sections to hold dinner plates, saucers, and cups organize dinnerware well. But note that "piling" can be a problem even with special storage racks. If the area for dinner plates, standing on end, becomes overcrowded, dishes can fall out when one is being removed. If dishes are to be stacked on an existing shelf without a special rack, hooks can be screwed into shelving above dishes to hold cups; however, there must be enough space between the cups and whatever is on the shelf below.

Organizers that fit on the backs of doors, under shelves, and on shelves can utilize previously unused space in an organized manner. Just as dish racks make plates safely accessible, these organizers make finding an item quicker without the worry of knocking over other items. They come in a variety of sizes suited to specific uses. For use in narrow width spaces there are special holders for canned goods, which are one or two cans deep and can accommodate varying numbers of cans depending on the shelf length.



*For better kitchen organization small appliances such as toasters and blenders can occupy the countertop near an outlet where the cook will use them.*



*This spice rack from Copco can hold 18 jars of spices arranged alphabetically. Clear, brailled labeling tape is affixed to lids allowing print to show through. Points of triangular sections can provide tactual clues to locations of rows.*

Labels placed on the can tops can be located quickly since cans are not stacked on top of each other. Organizers designed for holding bottles are useful because each shelf has a protective crossbar to prevent the bottle from tipping out of the shelf. Other organizers hold wrap products such as foil, wax paper, plastic and paper bags. These come in two basic styles. One holds the boxes of wrap so that the box must be removed for the wrap to be used. If the box is returned to the holder with the cutting edge facing the back, the risk of injury to a hand when reaching for the box is reduced, whereas having boxes with saw edges stacked in a drawer or piled on a shelf increases the risk of such an accident. The second style is a dispenser, which holds the rolled wraps already removed from box and placed in the compartment with the end of the sheet extended. The wrap can be pulled out, so it unrolls off the tube, and cut with an upward motion on the serrated edge of the dispenser. Usually there is a paper towel holder on this type of organizer. These items can be purchased from mail order houses dealing in housewares or locally wherever Rubbermaid or similar products are sold.

Refrigerator shelf placement often leaves unused space underneath the shelves. Slings that hook onto the shelf above utilize this space for cans, bottles, and small food items. Baskets designed for compartmentalizing freezer packages can hold individual items (such as all frozen vegetables) within a defined space and thus eliminate searching through the freezer for a particular item.

Certain tools and small articles of cooking equipment such as potholders need to be within reach during cooking. Utensils can be hung on a pegboard near the work site. The shape of the utensil can be painted in a contrasting color to facilitate proper placement by a person with low vision. Potholders and dish towels sewn with Velcro tabs can be attached to a strip of Velcro glued to a handy vertical surface such as the side of the refrigerator to prevent fallen

potholders from ending up under the refrigerator, problem that magnetic hooks can cause since they are easily knocked off. Locating frequently used, smaller items can also be facilitated by having duplicates stored near specific work sites where they will be used.

Of course, one must also be safety conscious when arranging the kitchen. Knives should be in blocks or holders, with the blades all facing the same way, to prevent accidental injuries. Fabric items such as dish towels should not be hung where they can get caught in the oven door or fall onto the stove. Utensils hung on pegboards should not have exposed sharp edges, and the hooks should be rubber-tipped. While these safety measures are reasonable precautions in any kitchen, they are especially important in the kitchen of the visually impaired cook, who may be locating desired items tactually.

Alternative containers for food items can be safer, can keep food fresher longer, and can provide more convenient access than can original packaging. Airtight canisters, jars and containers keep out bugs and make it so much easier to get at items usually contained in small-necked bottles or boxes. Wide-mouthed containers such as peanut butter jars can be used for oil, salad dressing, and other commodities which may be difficult to handle; wide-mouthed jars permit the cook to dip into or spoon out contents, and permit dispensing procedures which are more controlled, more accurate and neater than pouring. Baby food jars are great for spices and other condiments. But, generally, plastic is safer than glass. Tupperware is one brand name that merchandises a wide assortment of plastic storage containers that permit dipping into as well as pouring out of. They stock a cereal container with a spout that solves the problem of cereal pouring out of the box all over the table. There are broad based containers that prevent items that usually come in bags (such as flour) from falling over and spilling. Once these commodities are stored in more stable containers they can be placed on trays that slide out of cupboards or on lazy susans which can spin items stored at the back to the front for easy access. Both usually have a lip on the edge to prevent the items from falling off while in motion.

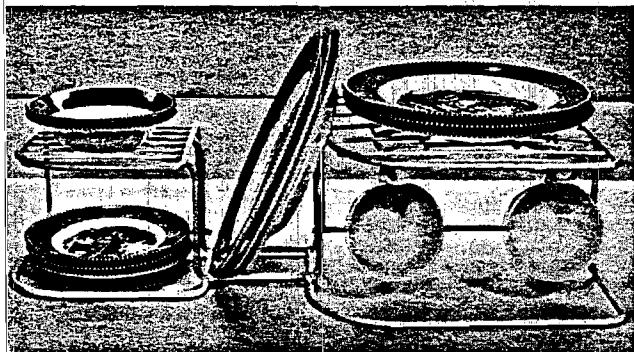


*Bold, black lettering on these wide-mouthed canisters stands out for cooks with low vision. Graduated sizes of canisters provide effective "labeling" for tactual location and identification.*



## RESOURCES

### DISH ORGANIZERS



**Rubbermaid Dish Rack.** Vinyl-coated steel wire that won't scratch dishes. Has several locations for separating different size dishes. Has a place to hang teacups. Available in local hardware stores, department stores, and kitchenware stores, which will have a wide selection of other organizers. Approximately \$7.00.

A **Three-Shelf Unit** is available to fit into hard-to-reach corners. Lillian Vernon, \$4.98; Miles Kimball, \$6.98; Walter Drake, \$6.99.

A **Platter Rack** that screws under a shelf can hold a platter securely. Measures 10 x 9-3/4". Lillian Vernon, \$2.79.

### LASSWARE ORGANIZERS

A **Stemware Rack** holds inverted goblets and wine glasses by the base, similar to those in restaurants and cocktail lounges. This version is protected by rustproof vinyl-coated steel. Hanging glasses thus leaves usable shelf space underneath. Lillian Vernon, \$5.98.

### POT AND PAN ORGANIZERS

**Standing Tray Rack** holds trays, muffin tins, cookie sheets, and even pot lids and pans standing on edge to fit into the vertical slots. Miles Kimball, \$4.69; Starcrest, \$3.99; Walter Drake, \$5.99.

**Pot Lid Holder.** Triangular unit hangs up and could also hold tins if located in a wide enough area. Measures 17" x 9". Lillian Vernon, \$3.98.

**Skillet Rack** has four horizontal slots to hold four skillets for easy removal and storage. Saves space by allowing the four to occupy same area of cupboard but prevents the inconvenience of removal and replacement caused by stacking. Lillian Vernon, \$7.98.

## UTENSIL ORGANIZERS



**Wall-Hung Knife Rack** for steak knives is available and will prevent knives from falling out. Country Cottage, cost not available.

**Wood Block Knife Holder** is a heavy block with rubber feet and has slots to hold knives vertically, points down, and handles ready for grasping. This version also has built-in knife sharpener. Lillian Vernon, \$11.98.

**Cutlery Tray for Drawer**, usually made of solid plastic, organizes flatware in drawers. This version is made of vinyl coated mesh that won't collect dust. Lillian Vernon, \$8.98.

### WRAP ORGANIZERS



**Door-Back Unit** to hold rolls of wraps for dispensing also has space for paper bag storage. Rubbermaid, \$6.00. Vinyl-Coated Steel versions hold and dispense rolls of wrap. Miles Kimball, \$4.99; Walter Drake, \$4.99.

## DOOR STORAGE ORGANIZERS

**A Bottle Rack** can be obtained in the form of a three-shelf unit that can be hung on a closet door, and it can hold canned goods as well. Measures 18" x 18" square x 4-½" deep. Lillian Vernon, \$9.98.

**Shelving Unit with Adjustable Shelves** comes in heavy duty plastic, with eight adjustable shelves. Also hangs on the back of a door. Measures 72" x 18", with a shelf depth of 4-½". Joan Cook, \$30.00.

## REFRIGERATOR ORGANIZERS

**Bottle Sling** attaches to the refrigerator shelf and hangs underneath to provide horizontal space for holding tall, capped bottles on their sides. Can solve storage problem created by bottles too tall for existing shelf space. Joan Cook, \$5.00.

**Food Sling** — Similar to bottle sling. Joan Cook, \$7.00.  
**Can Sling** holds six soda-size cans. Joan Cook, \$5.00.

**Large Can Sling** holds 12 oz. cans. Cans are loaded from the top and are dispensed from bottom slot. Miles Kimball, \$3.69; Sunset House, \$2.99; Walter Drake, \$4.49.

## FREEZER ORGANIZERS

**Freezer Basket** measures 5-¼" x 7-½" x 14". Miles Kimball, \$3.60.

**Set of Freezer Baskets** — A set of three baskets that stack and interlock. Each measures 5-¼" x 9-½" x 19-½". Miles Kimball, \$5.89.

**Ice Cube Tray Rack** — Vinyl-coated steel, rustproof, holds three ice cube trays securely to prevent spills. Rubbermaid, cost not available.

## MODULAR ORGANIZERS

**Slip-On Shelves** are to attach beneath existing cabinet shelves. A lip on the front edge of these shelves prevents items from falling. This version is not securely fastened, so heavy objects should not be stored, but lightweight items such as dish towels, plastic containers, etc., are appropriate. Lillian Vernon, \$4.98; Miles Kimball, \$5.29.

**Stacking Storage Bins**, often used for onions and potatoes, can be utilized to make other items readily accessible, since they stack so as to have both front and back open for reaching the desired item. When stacked, the individual bins lock together; wheels on the bottom unit make it mobile when needed. The four bins in this version are made of shatterproof plastic and measure 21-½" x 14" x 7". Starcrest, \$19.99.

## UNITS FOR ALTERNATIVE WORK AREAS

**Serving Carts on Wheels** — In the following list, products from all three sources are portable, and the cart available from the last also folds for storage; FashionAble, \$35.00; Help Yourself Aids, \$72.95; Fred Sammons, \$39.95.

**Wall-Mounted Folding Table** — This wall-mounted folding table measures 16" x 24" when extended for use and folds flush with the wall when stored. Joan Cook, \$25.00.

**Sink Board** — For extra counter space, this rigid polyethylene cutting board fits over most standard size sink. Lillian Vernon, \$6.98.

**Tray-and-Colander Unit** — This unit may also fit over sink for extra work space. For preparing vegetables or other food requiring washing or draining, the colander a useful addition. Lillian Vernon, \$4.95.

## Alternative Labels

Organization of the materials or tasks involved in food preparation will often depend on having access to information commonly available only in print form. For the visually impaired cook, alternative labels for identification of appliances, settings on appliance controls, food packaging and canned goods, cleaning supplies and other household items must be considered in conjunction with kitchen layout and with planning the actual processes of food preparation. The controls of all appliances, which normally have settings imprinted with small numbers, can be labeled in tactile media so that a visually impaired person can set temperatures, cycles, speeds, and other information where appropriate. Not every setting needs to be marked but only those the person requires for particular tasks. For instance, refrigerator dials can be marked so person can defrost the freezer and reset the dial. Some dials need not be marked since settings can be memorized according to a clock reference.

For persons with low vision, contrast can be used as a labeling method. Dark organizers used to store light colored plates can assist in their identification. Colored tape or paint applied to racks, cupboard corners, and drawer handles can identify categories of items and can aid in their quick location as well.

For other members of the household, it should be remembered that alternative labels can obscure the existing printing. Diagrams, lists of cupboards and drawers, and charts of items and areas marked (e.g., 350 degrees on the oven dial) should be shared with other persons who use the kitchen. For the visually impaired person, such lists can also serve as a reminder of the marking system and symbols if in a medium he or she can refer to.

Attention to lighting can make existing labels and alternative large print labels more accessible to persons with low vision. Proper lighting can also turn a previously nonvisual task into one in which vision is usable. Flash lights kept in strategic locations can aid in identification of items. Gooseneck lamps with the proper clamps can be clipped onto tables or workspaces. Where lamps would be awkward, stick-on or easily attached fluorescent fixtures can go under cupboards and other desired places.

Issue No. 5 of *Aids and Appliances Review* is devoted to labeling materials and techniques and should be consulted for more detailed and complete information on this aspect of organizing the kitchen for use with vision loss.

## Recipe Management

When rearranging the kitchen to best suit all involved, some attention should be given to recipe storage and retrieval. Braille recipes usually last longer if done on plastic coated paper or thermoformed. Thermoform paper can be washed and reused. Often-used recipes written out with a felt-tipped pen should have clear contact paper applied to protect it. Print and braille recipes can be stored in file boxes, notebooks, or in any convenient manner for the person.

Because recipes can get lost if laid down on the work surface as well as get dirty quickly, they should be attached to the refrigerator, a cupboard, or a reading stand at a comfortable height for reading. A strip of magnetic tape can be affixed to a surface and another strip used to hold the recipe in place. A strong magnet is also useful on the refrigerator. A clip clothespin with a hook at the top, usually used to hold items drying on the shower curtain rod, can hold a recipe on a cupboard handle. Cellophane tape can be used, too. A clear acrylic cookbook holder, now popular, can also be extremely useful for low vision.

For those people who use taped recipes, a remote foot switch is useful because it leaves both hands free. After setting up the machine with the recipe tape, the foot switch need only be depressed to play the tape. It stops playing when foot pressure is lifted. For most people, placing the tape recorder in a plastic bag is adequate protection for the machine, and it is still easy to locate the buttons. Individuals with recent vision loss or new cooks may find

most effective to have recipes taped in full with a list of ingredients and amounts first and then listed out again in recipe directions. Specific timing is an important concept for recipes to include. Directions like "bake till lightly browned" lose significance with vision loss. Transferring directions of often-used mixes into a usable mode (tape, braille, large print) can mean cooking without getting someone to read the back of the box. As the cook becomes more comfortable with newly learned skills, a shorter version of all recipes may be all that is required.

## FOOD PREPARATION

### Planning

Just as more intricately defined patterns of organization are necessary for the visually impaired cook, so planning which is more detailed and precise is required before actual food preparation begins.

In food preparation, the recipe prescribes the ingredients, their amounts, the sequence of their addition, techniques for combining them, and even the amount of time within which these techniques must be performed to achieve the right degree of doneness.

With vision, the cook can easily refer to the recipe card or cookbook to confirm measures and check progress in the steps of preparation. Visual cues — browning, changing

texture or consistency, rising steam or bubbles — all alert the sighted cook to end stages of cooking. Tactile methods can help compensate the visually impaired cook when these visual methods are lost. However, even with alternative devices and techniques, vision loss can still interfere with these monitoring techniques. Therefore, in addition, carefully planning the steps of preparation, performing some steps at the beginning, cleaning as food preparation progresses, and accurate timing are all techniques essential for keeping order and promoting success when the visually impaired cook prepares food.

To plan each step of the task at hand, the recipe should be read or thought through from start to finish. All of the equipment and ingredients should be gathered and arranged according to the sequence of use on a tray or cookie sheet. This way, missing ingredients will not cause disaster halfway through a recipe! Organizing the ingredients will also save time in searching and cleaning up. The same is true for doing all of the preparatory cutting, mixing, and measuring on a tray.

In particular, preparation steps such as melting butter, boiling water or greasing pans should be done before the recipe is begun. (Putting a plastic glove or baggie on one's hand for greasing the pan makes it easier to tell if all the corners are covered.) It is also easier to measure out ahead of time as many ingredients as possible. When an ingredient has been used, it should be moved to the back of the work area or put away. This helps in avoiding confusion about what has or has not yet been added. Rechecking the recipe for the correct combination of ingredients helps to avoid making any mistakes.

### Clean-Up

Cleaning up as work progresses prevents major work at the completion of a task. The cook should wipe hands with a damp paper towel or cloth, not an apron, to prevent the spread of germs. The visually impaired cook using tactile methods may feel more comfortable wearing plastic gloves while handling food. A sponge nearby will also come in handy. An open milk carton with a garbage bag in it beside the work area maintains cleanliness and saves steps. Likewise, a colander for catching peelings, egg shells, and other debris during food preparation can be placed in the sink to eliminate the need for cleaning later. Wiping up spills as they occur, particularly on the floor, can prevent a hazardous situation. Should a dish or glass break, a damp paper towel is the most efficient, safe means for picking up small slivers of glass. During food preparation, dishes and utensils can be rinsed as they are used and placed in a pan of soapy water to soak before washing. For this process, a disposal cover for the electric garbage disposal is useful in preventing silverware and other small items from getting lost while still allowing the water to flow through. Cleaning up as the work of food preparation progresses saves work after dinner for any cook. But for the visually impaired cook the technique is especially important, because maintaining order is much easier than attempting to create order after pots and pans, ingredients,

and garbage have become intermingled and scattered throughout different kitchen work sites.

#### RESOURCES

**Plastic Gloves**, similar to lightweight hospital gloves, come in packs of 100. Miles Kimball, \$2.39.

**Disposal Covers** are available commercially; Miles Kimball, \$.89; Walter Drake, \$1.29.



Colander with a sturdy base and handle can be used for garbage in the sink as well as for the transfer of drained ingredients. The colander pictured has lips for pouring and handles for easy grip and is made of plastic. One and two-quart models. Tupperware, \$3.98; \$4.29.

#### Measuring

Accurate measurement of ingredients will insure a certain amount of consistency each time the recipe is used. Conventionally, ingredients are measured according to volume or weight. Volume is measured in units of teaspoons, tablespoons, ounces, cups, pints, quarts, and gallons. Commonly, vision is used to "read" the tools of measure — a teaspoon of salt is detected by observing that the level of salt coincides with the edge of the teaspoon; seen through the sides of a glass measuring cup, a quarter cup of milk is measured when its level coincides with the line indicating "1/4." However, with vision loss such visual cues are no longer available so that the customary tools must be adapted or special techniques substituted in order to arrive at the desired product.

Graduated, nested cups are typically used for only dry ingredients, since their top edge, rather than a marking within the cup, indicates a full measure of that unit. To prevent spilling between measuring and adding liquid ingredients, glass cups are used because their transparency permits observing the liquid level as it arrives at the unit measure marked by a line on the cup's side. However, with vision loss, nested measuring cups are recommended for both dry ingredients and liquid, since a full measure can be perceived tactually. Thus the guesswork in using a glass measuring cup can be eliminated. Usually there are four separate cups that fit into one another — 1 cup, 1/2 cup, 1/3 cup, 1/4 cup. Some sets also have a 3/4 cup. Tupperware's six-cup set also has a 2/3 cup. The handles can be labeled; however, by placing one cup inside the other, the size can be determined tactually.

For the visually impaired cook, techniques for accurate measurement differ very little from those recommended to sighted cooks. For dry ingredients the flat side of a knife can be used to level off a measuring cup by moving away from the handle. Dry ingredients, then liquids, then fat should be measured so the same cups can be used but should be wiped out between ingredients to ensure accurate measurement. For the highest degree of accuracy, plastic cups may prove better than metal; though metal cups are durable, they do dent, and deep dents can cause inaccuracy.

For the sake of accuracy, the visually impaired cook needs to be more conscious of spilling ingredients once measured, since balance of full cups normally depends heavily on visual cues. In home economics, the recommended measuring technique is to leave the cup on the counter for filling. But many visually impaired persons find holding the cup more suitable to prevent overfilling. Holding the measuring cup in the palm of the hand rather than grasping it by the handle can keep it level and prevent spills or a measuring cup can be placed in a shallow pan so any liquid spilled can be poured back into the container. A funnel is a versatile kitchen tool that can be utilized in such a case.

Metal measuring spoons can be bent to form a right angle between bowl and handle. The spoons can then be used like small ladles to dip into containers. They remain level if they are slid up the container side. Measuring spoon that cannot be bent can be kept level by holding the spoon handle on top of a measuring cup handle with the cup sitting on the table. An eyedropper can be used to measure liquids and to fill measuring spoons. The spoons should be kept on a ring to aid in locating the correct size.

To prevent spills when pouring from a full milk carton into a measuring cup, the carton can be lowered into the sink so the spout is even with the cup for pouring. Many people find the plastic milk carton holders with a handle less cumbersome to use (Miles Kimball, \$1.29, quart size \$1.79, 1/2 gallon). Milk can be transferred to a covered pitcher with a handle, too.

Diet conscious consumers, people with diabetes or other conditions requiring medically restricted diets, and those who are just trying to remain slim, may weigh their food on scales similar to postage scales. People who attend Diet Workshop or similar organizations may get scales to weigh allocated food portions or ingredients precisely. The scale where the indicator arrow is exposed can be marked with a substance that can be perceived tactually.

It is important for all cooks to know abbreviations used in recipes and equivalent weights and measures. If they are hard to remember, a reference sheet should be made. For visually impaired persons the information can be brailled, written in large print, or taped and should be kept with the recipes for easy location. Included on this should be helpful equivalents such as 1 stick of butter equals 1/2 cup equals 8 tablespoons.

## RESOURCES



*This Rubbermaid pitcher holds 1½ quarts, fits easily onto refrigerator shelves, and provides contrast with lighter surroundings for easier location by persons with low vision.*



*Right, in the photo, are the nested Tupperware measuring cups, discussed above. Metal cups and spoons are discussed in the text and "Resources" section below.*

**Metal Measuring Cup Set.** Handles may be bent perpendicular to plane of cup to permit ladling of ingredients from wide-mouthed containers. American Foundation for the Blind, \$3.75; Independent Living Aids, \$3.65.

**Aluminum Measuring Spoons.** Two sets of spoons, one set with the handles bent, can serve a myriad of uses. American Foundation for the Blind, \$1.00; Independent Living Aids, \$1.00.

## Cutting

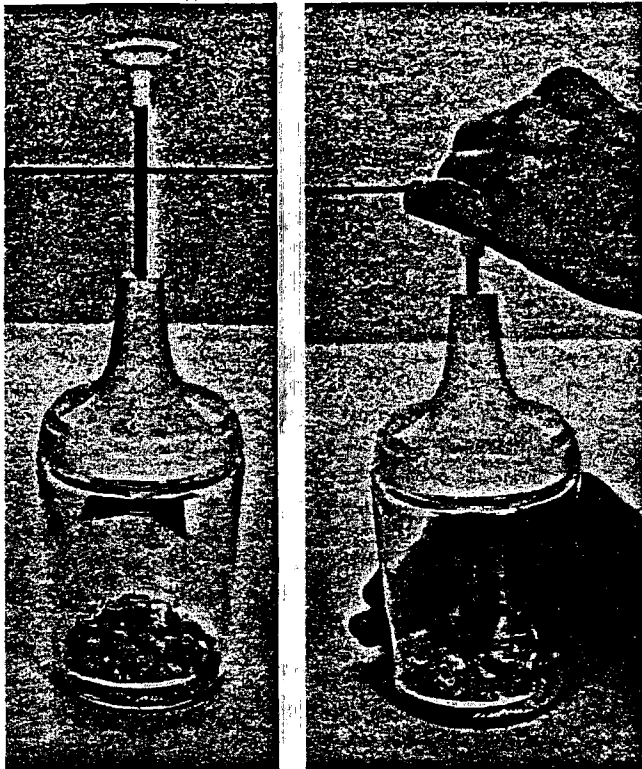
Like measuring, the cutting necessitated by food preparation presents special problems to visually impaired persons, and special resources or adaptive techniques are available as solutions. For any cook, the goals of cutting are safety and consistency of thickness in the item to be sliced, for this insures evenness of cooking, ease of eating, economy, or aesthetic appeal. For example, homemade cookies must be consistently thick to bake an even brown, and fresh baked bread makes better toast when the slices are the same thickness. A cutting board and bladed instruments—knives and choppers—are standard implements for the task. Safety and convenience can often be achieved by using specialized implements for cutting or chopping in tasks other than those for which they were designed. An onion chopper is an example. Basically, this device is a jar with a wood or plastic disk in the bottom and a chopper attached to a plunger which is threaded through the lid of the jar. To be chopped, an onion is placed in the bottom of the jar on the chopping disk, the lid is screwed on with the chopper positioned over the onion. Depressing the chopper rapidly and repeatedly can chop nuts as well as onions, or anything not too hard, into small pieces. Fingers are protected and small bits of food do not shoot all over the counter. A cheese slicer can be used not only for producing equally thick slices of cheese but also of other soft solids such as a roll of refrigerator cookie dough. Onion slicers consist of a dozen or so teeth mounted parallel in a handle, much like teeth on a comb. For even slicing, the teeth are designed to hold the onion steady and guide the knife; it can also be used for cutting other small items into thin, even slices.

Cutting boards serve to stabilize items to be cut while they provide a safe undersurface for the knife edge to draw against. Available in a variety of styles, those with suction feet best stabilize the board, and those with raised edges prevent food from sliding off. A board with spikes several inches long protruding from the center can impale and anchor the food for the greatest stability. But the spikes create a safety concern.

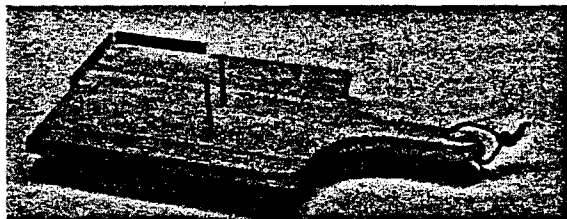
Another approach to stabilizing the food being cut is provided by roast holders and slicing guides designed somewhat like giant figures at the end of scissorlike handles. When the handles are squeezed together, the fingerlike tines grasp the item to be sliced and provide evenly spaced guides for achieving equal thickness. These are designed for roast meats but can also be used for large fruits such as grapefruit. Softer items such as bread may get pinched in the sides.

Finally, the Magna Wonder Knife is perhaps the most well-known cutting aid. It is a long, sharp knife with a guard parallel to the blade; the guard fits flush over the end of the item being cut while the knife blade cuts a one-inch slice by being positioned parallel, one inch behind the guard. The next slice is cut to the same thickness, and the next, because the guard always rests against the new end of the item with the knife blade one inch back. Commonly, the Magna Wonder Knife is used on bread and meat.

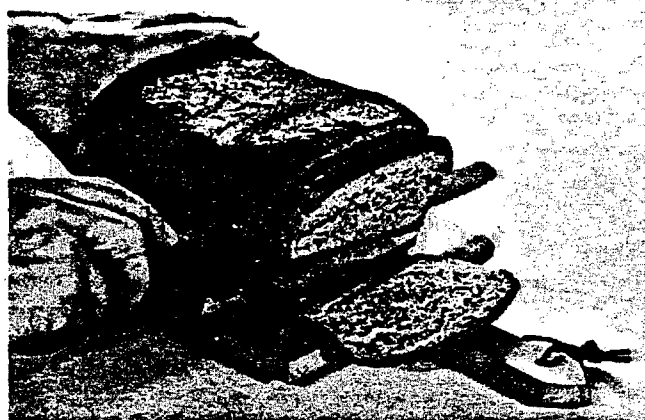
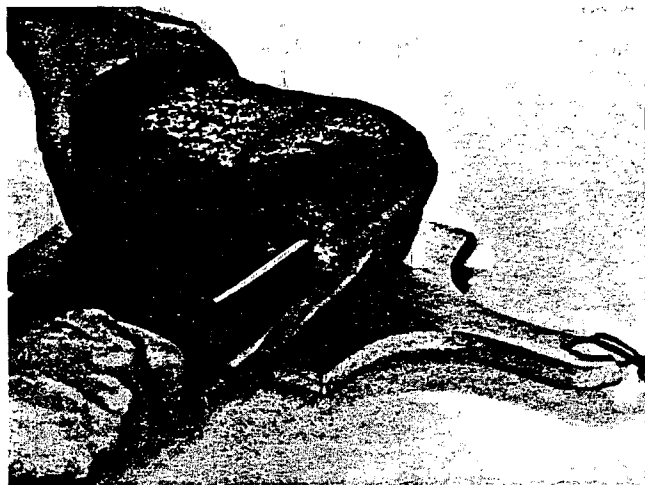
## RESOURCES



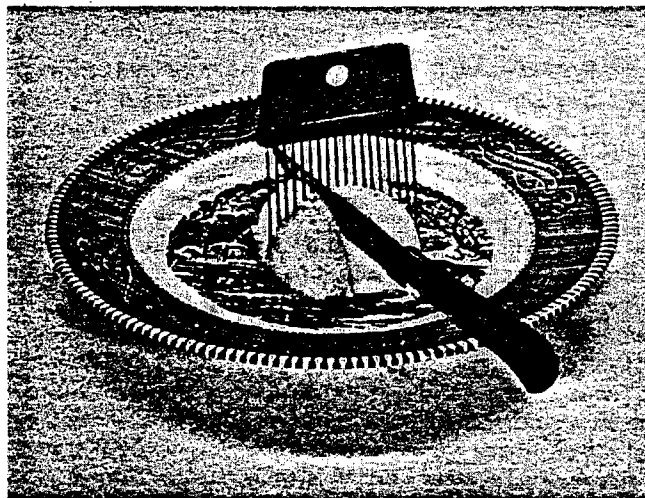
**Onion-Chopper.** This glass jar has a cutting surface in the bottom and a 4-blade chopper activated by pushing the handle into the lid. Available at American Foundation for the Blind, \$2.50; Independent Living Aids, \$2.35; and a heavy duty model is available at FashionAble, \$6.50.



**Cutting Boards.** Available at FashionAble, \$11.50. Similar models available from Fred Sammons, \$12.95; and Help Yourself Aids, \$22.95. Royal National Institute for the Blind sells a bread cutting box that holds a loaf in place and a knife fits in a groove for £9.50.

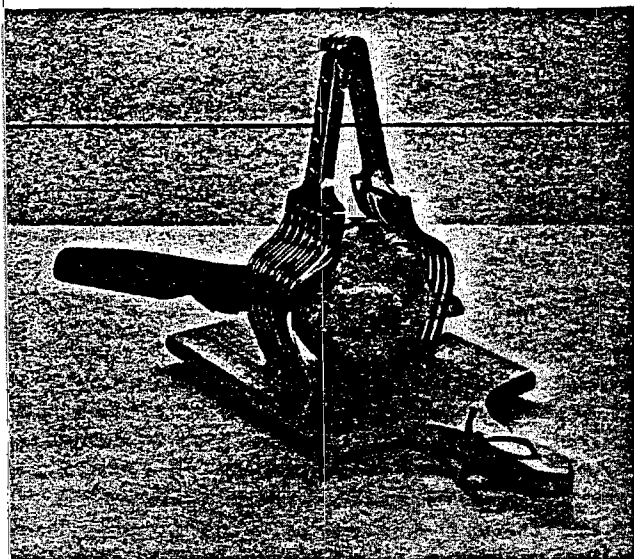


**Magna Wonder Knife.** Available in a left or right-hand version. American Foundation for the Blind, \$18.00; Independent Living Aids, \$17.75; Massachusetts Association for the Blind, \$16.00.



**Onion Slicers.** Approximately twenty parallel steel prongs hold the food for thin slicing. Available at Mile Kimball, \$.79; Sunset House, \$1.19.





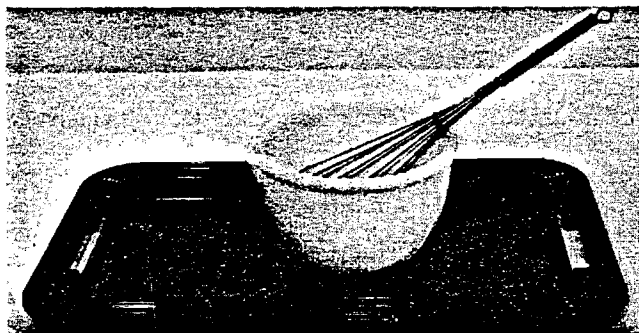
**Roast Holder and Slicing Guide** – Accommodates food up to 4" wide. Must be used with a narrow blade knife. Available at American Foundation for the Blind, \$11.95; Independent Living Aids, \$9.50.

## Mixing

The problems which mixing presents to the visually impaired cook stem from the difficulty of preventing ingredients from spilling or splashing during the rapid stirring action required and from the difficulty of timing the short intervals of the process without vision. With vision, the container of ingredients can be monitored to note changes in texture or consistency which signal when the procedure should be completed, and the position of the contents relative to the top of the container is apparent so that the speed of mixing or angle of container can be adjusted to prevent spills and splatters. To detect the passage of seconds or minutes within which the mixing should occur, a wrist watch or wall clock can be habitually consulted by the careful cook, a technique essential, for example, in preparing a commercially packaged cake mix with an electric mixer. Without the use of vision, adaptive techniques and equipment can assist in these procedures.

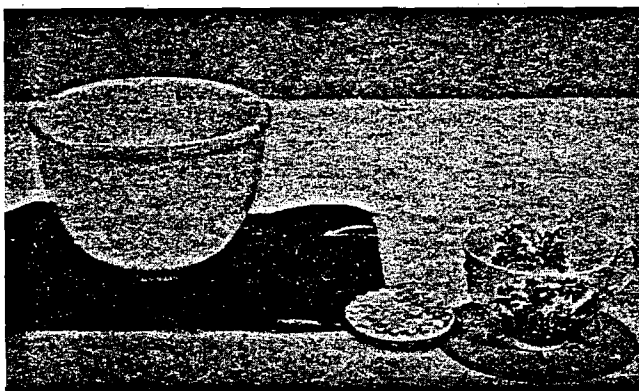
Timers are not as useful as are adaptive techniques for learning to sense when a shorter duration time period, such as that required for mixing or whipping, has elapsed. Rather, "feel" for short measures of time is more effective and can be taught by experience. For example, if a first experience of whipping cream produces butter rather than dessert topping, in further attempts the cook can learn to sense tactually the changes of consistency approaching the butter stage and to halt the whipping. With more experience, a sense of time for this procedure can become second nature. (And a sense of time for other procedures of food preparation, besides mixing, can be learned as well: melting butter, frying an egg, and kneading bread, for instance.)

For keeping the mixing bowl stable and for making clean-up easier, there are certain kitchen tools and other materials which can provide assistance. Besides providing stability, a tray under the mixing bowl can catch any spills. When attention is given to color contrast between bowl and tray, a person with low vision can be aided in locating and monitoring this arrangement during food preparation. Other materials can also help stabilize the mixing bowl: a soft rubber jar opener, a damp dishcloth or sponge, or a piece of nonslip plastic such as dyceum. Dansk and Copco, manufacturers of high-quality, designer kitchenware, make bowls with rubber rings at the base to serve the same purpose. (Note: electric mixers should be used with caution and attention to where the beaters are in relation to hands and the spatula).



*A tray, discussed above, can provide stability for mixing as well as contrast for low vision perception.*

## RESOURCES



*The mixing bowl stands on a sheet of dyceum while the teacup rests on a rubber jar opener. The Little Octopus Suction Cups are between jar opener and dyceum.*

Dyceum, blue, nonslip plastic material, can be cut into shapes or sizes needed. Its tacky surfaces adhere to both countertop and containers placed on top of the dyceum, so slipping is prevented. Comes in an 8" x 72" sheet. Help Yourself Aids, \$34.40. Fred Sammons, \$28.50.

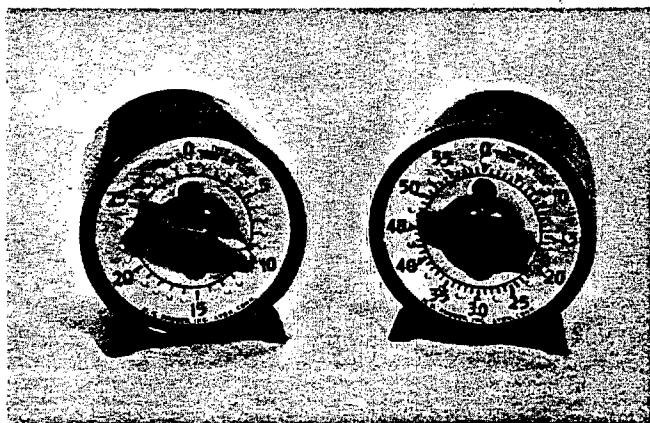
Little Octopus Suction Cups are well known for holding soap in the shower. The suction cups on both sides also can anchor glasses, dishes, mixing bowls, and other items in the kitchen. They come in sets of three. Help Yourself Aids, \$2.95; Fred Sammons, \$1.48.

**Jar Openers** are flexible disks of soft rubber, often textured and approximately 6" in diameter, that are designed for gripping and unscrewing stubborn jar lids. They may also be used like dyceum (above) for stabilizing items on a countertop. Usually available in hardware stores or the kitchenware sections of supermarkets and department stores.

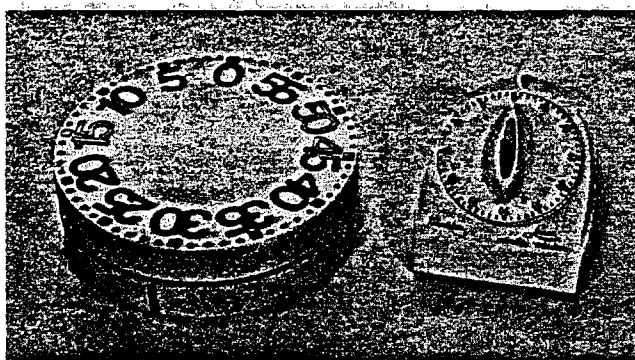
## Timing

Since time is a major component of food preparation, a timer is an essential piece of equipment in the kitchen of the visually impaired cook. Unfortunately, timers built into the range are rarely useful for someone with limited vision, since the numbers can be difficult to see, even with normal vision. For persons with no useful vision, these timers are also difficult to mark tactually, since the numbered clock face is usually recessed behind glass. But alternative timers are available. Braille timers have raised dots that are used in setting the dial. Long-ring timers, about the size of a small dinner plate, have become fashionable kitchen equipment; large, black numerals mark the clock face, visible to persons with low vision. But note that these popular timers must be treated carefully to avoid breakage. A regular print timer can be adapted tactually, or a large cardboard ring with large print corresponding numbers can be affixed to encircle the regular dial. When an extra minute can be disastrous, as in baking cookies or using the microwave oven, the talking clock in the elapsed time mode is particularly useful because it automatically announces the time.

## RESOURCES



**Marktime 30-minute Timer** (left in photo), and **Marktime 60-minute Timer**. Each has two raised dots at the 5-minute intervals. The 60-minute timer has 3 raised dots at 15, 30, and 45, and one dot at 2-1/2 minute intervals. The 30-minute timer has one dot at each minute. The 60-minute timer is available as follows: Independent Living Aids, \$12.75; American Foundation for the Blind, \$12.95; Massachusetts Association for the Blind, \$13.00.



**Low Vision Long-Ring Timer** (left in the photo) can be set on a countertop or hung on a wall. The 60-minute low vision timer is available in black numerals on yellow background at Independent Living Aids, \$10.35; and American Foundation for the Blind, \$10.50. It is also available in black on white at Massachusetts Association for the Blind, \$10.00.

The **Lux Long-Ring Timer** (right in the photo) has raised lines at one-minute intervals and also raised numbers at each 5-minute interval, available at Independent Living Aids, \$8.95; and American Foundation for the Blind, \$9.00.

A **Braille Timer** has braille numerals at 5-minute intervals, available at Royal National Institute for the Blind, £6.53.

## Range and Oven Cooking;

## Safety Techniques and Equipment

The subject of safety techniques and kitchen equipment—ranges, electric fry pans, broilers, and so on—and how to use them could provide material for a textbook. One standard volume which addresses this subject in detail is *Mealtime Manual for People with Disabilities and the Aging*, compiled by Judith Lannefeld Klinger and published by the Campbell Soup Company. For a more complete discussion of equipment and techniques for food preparation and various heat sources, that book should be consulted. Here we hope to present an overview of a few essential considerations.

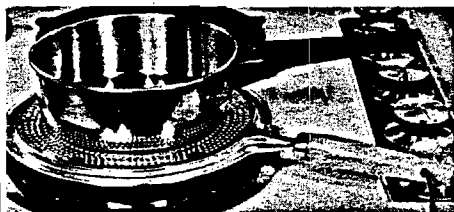
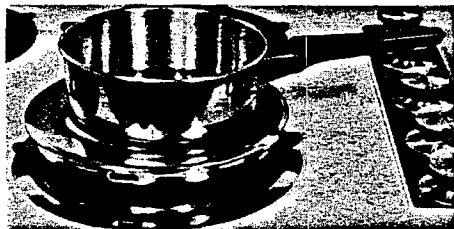
One consideration is a method of lighting a gas range. Although most modern gas ranges have automatic pilot, many energy-conscious persons choose to have the gas company shut down the automatic pilot, a procedure which saves fuel and keeps the kitchen cooler in warm weather. For this situation, and for times when the pilot goes out by accident, equipment for lighting the gas range manually becomes important, especially for visually impaired cooks who may find this procedure more intimidating until it becomes familiar. Available equipment includes matches and flame igniters. Long fireplace matches are safer than kitchen matches as the distance from flame to hand is greater. Flame igniters come in three major types: flint, battery, and butane. The flint igniter is a flint and steel sparking device. When the handle is squeezed the flint and steel abrade to produce sparks. Sparks will, of course, ignite



the gas, but these flint igniters are hard to direct and difficult to use effectively. The battery operated igniters have a flexible stem so can be directed easier. When a button is pushed, a coil glows to light the gas. The butane lighter is the most streamlined and easy to use. When the switch is flipped, a consistent, but adjustable, flame is emitted. The butane lighter can be used for candles, fireplaces, and barbeques, too.

For controlling the gas flame and cooking with it, the dial location for the lowest flame level can be labeled so it is known. This is important since the flame may blow out any lower level.

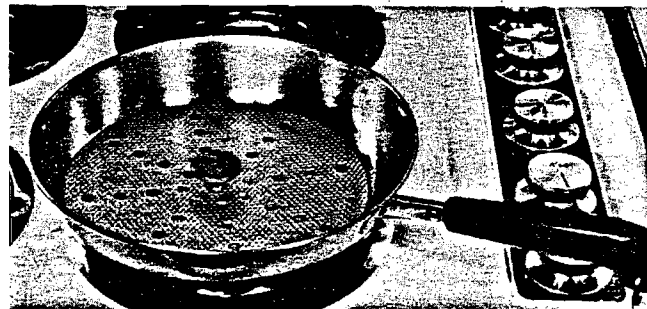
Positioning pots and pans on the range also involves safety considerations. Always turn the handles of pots and pans away from the edge of the range in order to prevent knocking one off or heating the handle. Pan handle holders, which are vertical rods with suction cup feet, attach to range top and provide a rigid, stable place for the handle to rest. This prevents the pan from spinning when contents are stirred. Centering of pans, both for safety and for even cooking, should be practiced on a cold unit. A hardwood spoon handle or chopsticks can be used as a hand extension to check if the pan is centered once it has been heated. For even cooking, flame tamers or even-heat guides are available to evenly distribute heat over the bottom of a pan and to prevent scorching. Those with handles and smooth surfaces can be ineffective because the unit itself can slide on the burner and bring the wooden handle into position for scorching. Many prefer the AFB version because it has grooves which grip ridges of the burner. However, the grooves are relatively slight, and it too can be easily forced to slide. The material of which pots and pans are made also influences their stability once they are positioned. Lightweight, shiny bottomed pans are slippery and move too easily on the burner. Size is also a factor. If possible, oversized pans should be used instead of small ones so that stirring, turning, and other procedures performed in the pot are less likely to create spills and splashes; if spills and splashes do occur, the greater size will cover the burner to prevent burning of contents there.



Top photo above shows the AFB Flame Tamer, \$5.00, while bottom photo pictures the Heat Diffuser available from ILA, \$3.25.

To prevent fires from splatters, the following techniques are recommended. Frying should never be left alone, as splattering can ignite and cause flash fires. It should also be noted that PAM spray can ignite as it is sprayed into the hot pan, so it should be sprayed in the sink and the pan brought over to the stove. Oil or butter can be spread evenly across the pan bottom with a basting brush or paint brush. Foods, such as chicken, should be dried off first to prevent splatters. Foods can be fried longer at lower temperatures to limit splattering. The commercially available splatter guard works, but it is so large that it is cumbersome and can easily be knocked over. It is also hard to clean. A metal colander inverted in a pan will serve the same purpose and prevent burns.

With vision loss, handling items of food within the pan can prove difficult or impossible. Balancing items as they are lifted for turning depends upon hand motion coordinated with visual information about the steadiness and position of the item resting on or in the implement used for turning. But special tools or techniques can help a great deal. Sausages, or other items that roll, can be skewered together on cake testers to facilitate turning by combining the individual sausages into a compact unit. A bacon crispener can eliminate the need for turning by causing both sides of the bacon to be cooked at the same time. The Foley food turner is designed to grasp food as it is lifted for turning. It consists of two spatula-like sections on handles attached at the top like tongs. There have been many imitations on the market — some better than others. The key is that the double turner grasps but does not "squirt" the food out as pressure is applied.



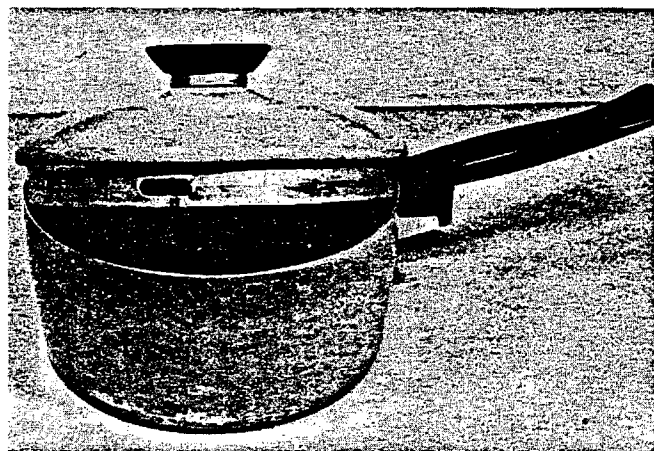
Shown above is the bacon crispener available from American Foundation for the Blind, \$1.75; Independent Living Aids, \$1.65.

Another variation on the traditional spatula is the three-piece turner, which fans two additional spatulas on either side of a central spatula to create a larger surface for lifting and turning. This three-piece turner is terrific for lifting bigger items from a pan but is difficult to use for flipping because of its width. Tongs with a good size grip and comfortable finger holes are great for lifting corn and other items from pans. A final consideration when choosing utensils for range top cooking is the material from which they are made. Specially coated turners must be used with Silverstone and Teflon pans.



*Array of spatulas and turners includes the three-piece, fanned turner (lower right) and the more widely used tong-spatula combination units together with regular spatulas and tongs.*

A commonly used item for frying is an egg ring. The ring holds the liquid egg in position until it is cooked. The ring itself can provide a landmark for locating the item in the pan. The ones with handles are the safest, although a clip clothes pin can also be used for grasping the ring to remove the item from the pan. For a homemade egg ring, a smooth-edged tunafish or small pineapple can with top and bottom cut off is the right size.



*The locklid saucepan aids in draining liquid off without spills or burns. The attachable pot strainers are hard to manage at first but work fine once the technique is mastered. A colander in the sink is an alternative method, but the risk of splashing is increased.*

To eliminate entirely the special problems of range top cooking, many recipes can be altered so they can be cooked in the oven. For example, those which call for frying can actually be accomplished by broiling or baking in suitable containers in the oven. Oven-cooking techniques can prevent spills and splatters of hot or flammable liquid, but rules for using the oven safely should be observed. Oven mitts should always be worn. The insulated long ones are best because they are fireproof and can cover the hand and arm up to the elbow. However, the padding hinders maneuverability, and it can char and smoulder. It has been found that many people may easily put the thumb into the food, which cakes on the fabric and then may catch fire. Even with oven mitts protecting hand and arm, one should never reach into the oven. The rack should be

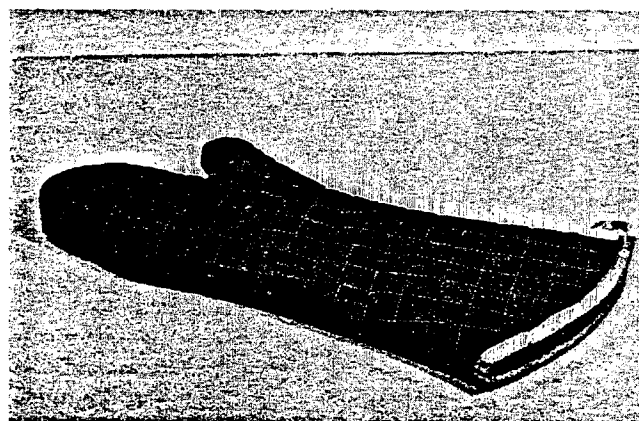
pulled out when any pan is to be placed on it or removed. Although oven mitts provide protection when the rack is to be grasped, wooden rack pullers are safer since they pullers are safer since they completely eliminate the need to reach into the hot oven.

Other hints for oven safety follow in the list below:

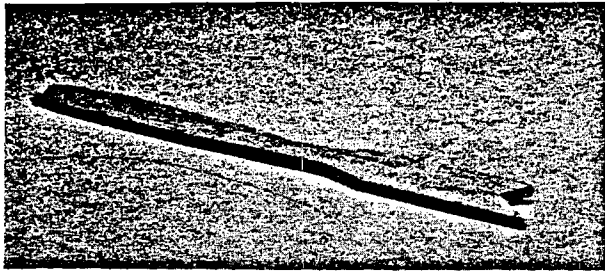
- The oven should be turned off before the door is opened.
- When one opens the oven door, one should stand to the side to avoid a blast of hot air.
- Recipes that call for a preheated oven can bake just as successfully if they are inserted into a cold oven before turning on the heat and are left to cook an extra five minutes at the end of the prescribed time.
- The top two rack positions in the oven should not be used, especially when broiling since the heating element will be very close to any splatters, which it can easily ignite.

Care should be given to the type of dishes and pans used in the oven. Time and temperature are different for glass cookware, so adjustments must be made. Casserole dishes larger than needed can prevent spills and make carrying easier but may require adjustments in the cooking time. Double pans or a cookie sheet under a dish, especially flimsy foil containers, adds support and also prevents spills from reaching the oven floor. When baking pies, one helpful tip is to keep one cup of filling out of the crust until the tin is on the oven rack. By adding it at that time, spills will be prevented. A tip for baking potatoes is to place them in a baking pan to eliminate searching the rack to locate them and accidentally rolling them off.

## RESOURCES

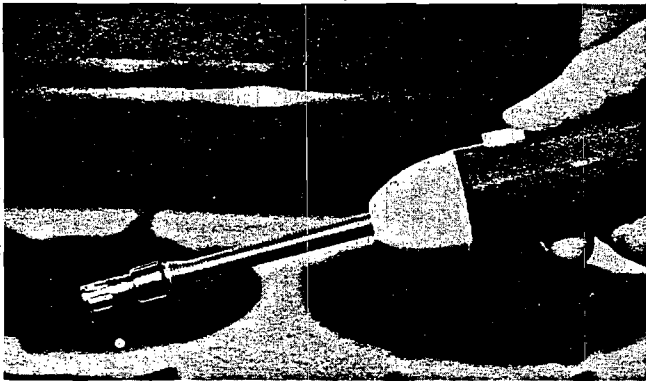


Oven Mitts which are flame retardant and elbow length are available from three sources. American Foundation for the Blind, \$3.00; Independent Living Aids, \$2.95; Miles Kimball, \$4.98.



**Rack Pullers** are long, notched sticks used for grasping the oven rack and pulling it out or pushing it back into position. Hardwood versions are best; rack pullers also come in pine, a soft wood which can smoulder at a lower temperature. Available locally from specialty shops for kitchenware such as Crate and Barrel.

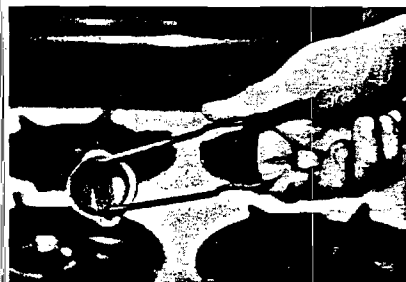
**Pan Handle Holders** as described in text above hold the pot handle between steel rods attached with suction feet to stove top. FashionAble, \$5.25; Fred Sammons, \$13.95, folding version, \$7.95.



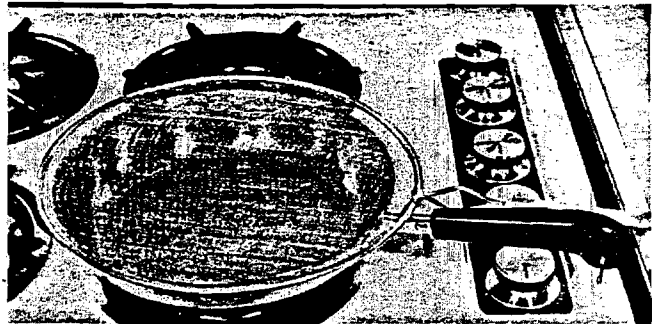
**Battery operated gas range lighter** is available. American Foundation for the Blind, \$5.95; Independent Living Aids, \$5.50.

**Butane Gas Range Lighter** is also described above. Lillian Vernon, \$14.98; also available in stores supplying camping equipment.

**Electronic Gas Lighter** operates on batteries. Its compact and streamlined case eliminates the potential of accidentally hooking the device on the burner grid. Brookstone, \$11.95.



The flint-type lighter as described above is available from two sources. American Foundation for the Blind, \$1.25 and Independent Living Aids, \$1.20.



**Splatter guards**, made of closely woven mesh to trap splatters but allow heat to escape, can be used to prevent splatters when lids are otherwise not desired on the pot or pan. Independent Living Aids, \$2.90; American Foundation for the Blind, \$3.00; Massachusetts Association for the Blind, \$2.25; Lillian Vernon, \$2.49.

## Serving

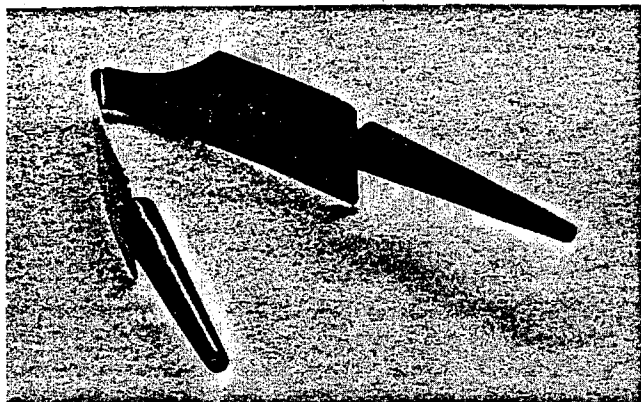
After preparing and cooking food, serving becomes the task, which involves apportioning, presenting, and transporting food prepared at counter or range to dining area. Meals may also be portioned out at the table, but this procedure may cause greater confusion. The visually impaired cook should learn how to arrange food attractively on a plate, and equal portions will help with this aesthetic concern as well as with economy by stretching the food so that everyone is served.

Several tools and techniques prove useful to the visually impaired cook who is to accomplish this task. A ladle is a wonderful aid for transferring soups, vegetables, stews, and other foods into bowls or onto plates, since the food is apportioned equally, cupped, and prevented from spilling. After the bulk of the container has been ladled out, the rest can be poured.

Squeeze bottles and pump bottles can be used for relishes, ketchup, salad dressing and other foods or condiments that tend to flow in globs out of their original containers when poured. These squeeze and pump bottles dispense in an easy, clean manner. To dispense sugar, sugar cubes or one-teaspoon dispensers are efficient. Toaster tongs are a safe way of rescuing toast from a toaster and placing it on a plate. (A magnet makes it possible to always have the tongs handy as they can be stuck to the toaster side.)

Pie cutting guides are commercially available for making evenly sized pieces, but for a homemade guide, tactual marks can be made on the rim of the metal pie plate by inverting it and lightly pounding a common nail into the rim's underside by just allowing the nail to dent but not pierce the metal. Raised dots are thus embossed on the plate rim's topside. To cut equal wedges, the knife blade is drawn through the pie from one dot to the dot directly opposite, thus cutting one straight line which halves the pie. To make more and smaller pieces, the knife is drawn from each dot to its opposite all along one side of the pie plate. Toothpicks placed at equal intervals along the circumference of pie or cake can serve as anchors for string that can likewise guide the knife.

## RESOURCES

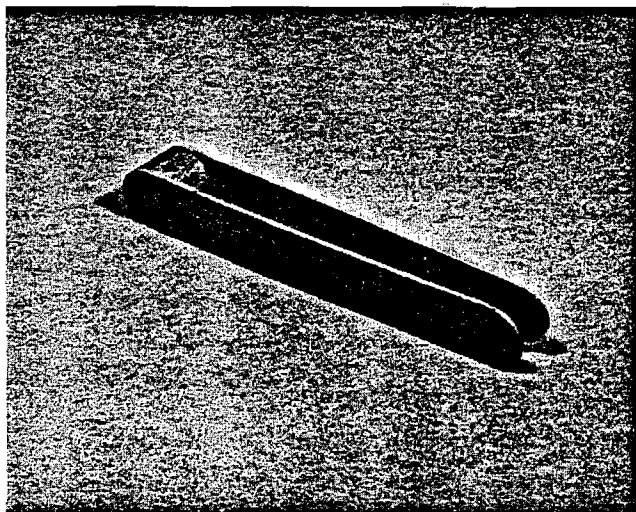


The **Cake Caddy** is a utensil especially designed for cutting and serving a wedge of cake. Blades join at top to form the point of a triangle while handles for grasping the wedge thus sliced extend from the other end of the blades. Independent Living Aids, \$2.25.

**Pie Cutting Guide** made of metal provides a cutting stencil for eight slices. American Foundation for the Blind, \$6.05; Independent Living Aids, \$5.95; also available from Science for the Blind is a six-slice version, \$3.00.

**Ketchup Pump** is available via mail order. Walter Drake, \$1.99.

**Sugar Meter** is a glass cylinder base with plastic conical top designed with opening in tip to dispense 1/2 teaspoon when poured. Holds 12 ounces. Independent Living Aids, \$1.65; American Foundation for the Blind, \$1.75.



**Toaster Tongs** are made of wood to prevent electrical shock from contact with toaster element. Independent Living Aids, \$.85; Miles Kimball, \$1.19.

## Alternative Appliances

Instant beverage heaters, slow cookers, pressure cookers, toaster ovens, electric skillets, and other small electric appliances belong to a class of modern kitchen equipment designed for greater convenience in cooking. With several automatic features, these appliances contribute convenience by allowing many components of food preparation to be combined into one step or reducing dramatically the amount of time needed. For a visually impaired cook, this kind of convenience provides a more controlled environment for food preparation, which can enhance organization in the kitchen's physical layout, storage space, and the planning necessary undertaken for stages of food preparation.

For combining many steps of preparation into one, innovative appliances are available. Compact and energy efficient, the toaster oven can be used to prepare frozen dinners and dishes as well as to toast bread or bake small items such as potatoes using less energy than when prepared alone in the large space of a conventional oven. For another example, a one-dish meal can be prepared in an electric skillet, where vegetables and meat can all be cooked together at once. For preparing individual light meals or snacks, instant beverage heaters can be used to boil the amount of water needed to transform packaged soup mix, cereal, instant coffee, cocoa, or tea into a satisfying food. These small appliances are units which accept a cup of cold water in a reservoir which is then heated by electricity to boiling point. After the sixty seconds required, the electric current shuts off automatically, and the hot water can be dispensed directly into the cup, with instant mix, placed beneath the reservoir's spout. In this unit, automatic features solve several problems that could be experienced by persons with vision loss, restricted range of motion, memory deficits. With the automatic shut-off, there is no need to time and to monitor the process, and the dispensing feature reduces problems associated with measuring and pouring a hot liquid.

The appliances discussed above share several further benefits. Using one appliance for preparing the whole meal can eliminate the need for certain techniques and devices particular to the visually impaired cook. Separate burners do not need to be turned on and off. Pans no longer need to be retrieved from storage and then centered on a burner. The more elaborate safety procedures for using a conventional oven, with its potential blast of hot air upon being opened, do not need to be considered. Because pots and pans are not scattered to various heat sources, searching for them during food preparation is another problem eliminated by single-unit cookers. Of course, this is not to say that all safety considerations are no longer important. Indeed, most important is the care which must be taken not to touch the extremely hot exteriors of these single-unit cookers when controls or handles are being sought with an exposed hand. But, if these and other crucial safety

techniques are observed, compact alternative appliances can make significant contributions to independent living with vision loss, and they can provide as well versatility and efficiency in energy use, values sought today by most consumers.

Microwave ovens, particularly, are becoming popular because of their versatility, and various features make them useful for cooks with vision loss. Taken directly from the freezer, food can be defrosted and cooked in one step. Because cooking occurs when the molecular structure of the food is changed through sound waves rather than heat, the oven remains cool; consequently there is no blast of hot air when the door is opened. Because sound instead of heat does the cooking, ovenware does not need to be heatproof, making it possible to cook in or on dishes to be used for serving the food; only metal cannot be used. For convenience, a mug full of water can be boiled in seconds for a cup of instant coffee. Instead of dials or panels of push buttons for temperature settings, the microwave ovens have a touch pad or touch panel which can be labeled more precisely than can most dials. In addition, braille overlays are available from Sears and Amana for the touch controls. Also of interest to the visually impaired cook, Panasonic is developing a talking microwave oven.

## RESOURCES

### INSTANT BEVERAGE HEATERS



The Sunbeam Hot-Shot is available locally as well as from distributors, specializing in products for the blind. American Foundation for the Blind, \$25.00; Dialogue \$18.00; Independent Living Aids, \$24.00; Massachusetts Association for the Blind, \$23.00.

Electric immersion heaters can heat water, premeasured when cold, in a cup or bowl. But if improperly handled, they are a potential safety hazard, particularly when the heating element is exposed. Science for the Blind, \$1.95; Miles Kimball, \$5.98.

### ELECTRONIC LIQUID LEVEL INDICATORS

Electronic Liquid Level Indicators can solve problems associated with pouring hot liquids to measure accurately. Their audible signal indicates when desired level has been reached. Royal National Institute for the Blind, L8.93.

### SINGLE-UNIT COOKERS

Electric Skillet from Sunbeam has a control with large, raised white numbers on a black background, useful for persons with low vision. American Foundation for the Blind, \$38; Independent Living Aids, \$36.95.

Slow Cooker from Rival has a control with audible clicks. Independent Living Aids, \$37.95.

Pressure Cooker from Mirro-Matic has an audible bouncing weight to notify when the set pressure is reached. American Foundation for the Blind, \$29.50; Independent Living Aids, \$29.00.

## CONCLUSION

The gadgets and equipment available to the visually impaired population are constantly increasing as technological advancements occur. There are multiple uses and valid reasons for much of what is available on the market. There is, however, never enough said about making do with what is at hand. Adaptations, common sense, and a little ingenuity can go far. All cooks, visually impaired or not, have to develop self-reliance and confidence in their ability to work safely and efficiently in the kitchen before they will feel comfortable enough to enjoy cooking. It is hoped that this issue of *AAR* will assist visually impaired cooks to move closer to this goal.

## COOKBOOK RESOURCES

### Key to Symbols:

BR = Braille  
LP = Large Print  
Tape = Tape Cassette

### AMERICAN FOUNDATION FOR THE BLIND

15 West 16th Street  
New York, NY 10011

BR — Mirro-Matic Electric Pressure Pan Cookbook

### AMERICAN PRINTING HOUSE FOR THE BLIND

1839 Frankfort Avenue  
Louisville, KY 40206

BR — Better Homes & Gardens Cookbooks

### ADA READING SERVICE

12 Renhold Road  
Wilden, Bedford, England

Tape — Grow and Cook Extracts

Tape — Easy Cooking for One or Two

### BIWORD PUBLICATIONS

Box 20  
Willmar, MN 56201

LP — Look 'N Cook \*

### BRaille AND TALKING BOOK LIBRARY

31-51 Commercial Road  
South Yarra 3141

Victoria, Australia

7 Tapes — In Charge of the Mess

### BRaille COMMITTEE

Beth Shalom Sisterhood

831 Ensley Lane  
Leewood, KS 66026

LP, BR — Rival Crockpot Cookery

### CAMPBELL SOUP COMPANY

Camden, NJ  
LP, BR

### GENERAL MILLS, INC.

9200 Wayzata Boulevard  
Minneapolis, MN 55440

LP, Tape — Betty Crocker Recipes

### GUILD FOR THE BLIND

180 N. Michigan Avenue  
Chicago, IL 60601

BR, LP, Tape

### IRISH ASSOCIATION FOR THE BLIND

8 North Great George's Street  
Dublin, Ireland

BR — Pressure Cooker Cookbook

### LIBRARY OF CONGRESS

Division for the Blind and Physically Handicapped  
Washington, D.C. 20542

BR, Tape, Records

Books and Magazines

### NATIONAL BRAILLE ASSOCIATION

Braille Book Bank  
422 Clinton Avenue  
Rochester, NY 14620

BR — Sharp Microwave Cookbook

### ROYAL NATIONAL INSTITUTE FOR THE BLIND

224 Great Portland Street  
London, W1N, 6AA, England

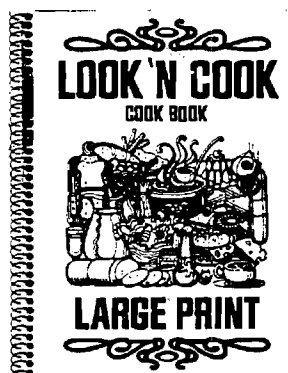
BR

### STATE SERVICES FOR THE BLIND

Communication Center  
1745 University Avenue  
St. Paul, MN 55104

BR (microwave books)

Tape — Betty Crocker Cookbooks



ACTUAL TYPE SIZE ORANGE

1 cup butter or  
2 cup white suga  
1/2 cup brown sug  
2 tablespoons gr  
orange rind

## INTERIOR ENVIRONMENTAL MODIFICATIONS

DOORS - Should have an opening of no less than 32".

To allow 2 persons, or a person and a guide dog, to enter or exit side-by-side, the door opening should be no less than 48".

Door frame/door color should contrast to the color of the surrounding area.

WINDOWS/GLASS DOORS - All large areas of glass should be identified by contrasting color decals at both face and chest height.

LIGHTING - Care should be taken to avoid glare and reflections. Matte surfaces can be used.

Stairs, handrails, bathroom and kitchen fixtures, etc., should be as well-lit as possible.

STAIRS - Handrails should be at least 30" higher than the stairs. Childrens' handrails should be 24" higher than the stairs.

Tactile strips can be a tripping hazard; grooves work better.

The top and bottom steps, and the handrail, should be of a contrasting color. Landings should also be a different color.

FLOORS - Reflective or glossy flooring should be avoided.

Different floor surfaces can be used to identify different areas.

SPACES/WALLS - Expansive open spaces should be avoided. Narrow corridors may also be difficult to navigate.

Sound reflecting surfaces may help orientation.

from: Visual Impairment and Blindness, December 1977  
Housing for the Handicapped and/or Elderly, Ga. Cooperative Extension  
Service, January 1982.

# On Your Own

September, 1978

Vol. VIII, No. 9

## LIGHTING

### For the Visually Impaired and the Aging

Dr. Mary Catherine Beasley, Guest Editor

For countless centuries man used his eyes out of doors under the natural light that nature provided for him. He used his eyes for distant seeing or for the performance of simple eye tasks. Then, almost overnight in the reckoning of time, man became an indoor creature, living and working by artificial light and using his eyes for close seeing tasks over prolonged periods of time. This change in seeing habits has put an extra burden on the eye—a burden that is made heavier by insufficient light. Good lighting is important for everyone but especially for the visually limited.

There are three elements in the process of seeing: the eyes, the task, and the light.

**The eye:** This remarkable organ is given us at birth. Be it small or large, blue or brown, we must accept it. We can take care of our eyes by proper use, diet, rest, and protection from infection. If eyesight is faulty, modern ophthalmic science can prescribe glasses and treatment to sharpen vision and relieve strain. Beyond this we can do little.

**The task:** We can do little about the seeing task itself. If one is a draftsman, he must continue drawing; if one is a seamstress, she must sew; if one is a proofreader, the type cannot readily be made larger or blacker for easier seeing.

**The light:** The third element in the process of seeing is the one big variable. Sight is a partnership of eyes and light. It is not good eyes alone that determine good sight. Without light there is no sight. Even when there is light, how much and how well normal eyes can see depends upon how good the light is.

#### The Factors Involved in Seeing

In order that an object may be seen, it must be made to appear upon the retina of the eye clearly and in detail. The clearness of an object, provided eyes are normal or properly corrected, is dependent on four fundamental factors—brightness, contrast, time, and size.

**Brightness:** The brightness of an object depends upon the amount of illumination on the object and the percentage of light it reflects. A white surface, characteristically, reflects more of the light that strikes it than does a gray surface, and a gray surface more than a black one.

**Contrast:** The difference between the brightness of an object and the brightness of the background against which it is seen is termed contrast. Perhaps brightness and contrast might be discussed as brightness-contrast because the visibility of an object involves both the brightness of the object and the brightness of the background against which it is seen.

**Time:** In the process of seeing there is an element of time just as there is in taking a picture. The speed with which eyes perform a task depends largely on the amount of light available. It requires less time to see accurately under adequate illumination than under insufficient lighting. It takes more time to see to sew a straight seam when the material is poorly lighted. Therefore, in order to reduce the time factor and provide faster seeing, it is necessary to increase the illumination. It also requires more time to see when the contrast is poor, as in sewing with black thread on black cloth or with white thread on white cloth. The factor of time is therefore, closely related to the factors of brightness and contrast. Where brightness and contrast are inadequate, more time is required to see.

**Size:** The size of an object is probably the most generally recognized factor in seeing. It is obvious that a large object is more readily seen than a small one of the same color—a golf ball as compared with a pearl, for example, or a pair of scissors with a needle. Light can aid in seeing small objects because it has the effect of magnifying them. However, here again the factor of size is closely dependent on the level of illumination and the contrast between the object and its background. For example, a golf ball on a white background will not be seen as easily as a pearl on black velvet, even though the golf ball is larger.

These four factors — brightness, contrast, time, and size — are involved in every seeing operation. They are interdependent and so entwined that they should always be thought of as related factors. Within limits, a deficiency in one can be made up by an increase in one or more of the others. As the level of illumination is increased, higher brightness can bring about an increase in the ability to see smaller objects, to distinguish between objects through their contrast, and decrease the time required for seeing. Good illumination is, therefore, an effective means of making seeing easier and more rapid.

#### Amount of Light

The eye is not capable of accurately judging the amount of light on a seeing task. However, illumination can be measured accurately by the use of scientifically designed instruments, one of which is called a *light-meter*. Just as a ruler measures length in inches and a thermometer measures heat in degrees, a light-meter measures the amount of illumination in terms of footcandles. A footcandle is the amount of illumination received at a point on a surface which is one foot from, and perpendicular to, the rays of a standard candle. Footcandles may then be thought of as "units of light."

**Comparative Footcandle Values.** On a clear, summer day the sun provides the earth with as many as 10,000 footcandles (units of light). These are the lighting values to be found on the beach, in the open fields, and on the golf course. To read in the direct rays of the sun is often glaring and uncomfortable. More comfortable conditions may be found in the shade of a tree where nature provides between 500 and 1,000 units of glareless, evenly distributed light. With outdoor levels of lighting varying from 500 to 10,000 "units", daytime interior illumination only a few feet away from a window is about 200 "units". As one moves farther away from the window, the number of "units" decreases more and more rapidly.

Eyes are used for all kinds of tasks in the evening in the average living room with illumination reduced to about 10 "units" or but one thousandth that of sunlight. This low level is entirely inadequate for many of today's prolonged and difficult seeing tasks. It must not be concluded from this discussion however, that indoor lighting levels should be in the range of the hundreds of "units" of light provided by nature with her huge expanses of sky, earth, and atmosphere to diffuse, reflect, and absorb the sun's rays. The rooms of a home are infinitesimal in comparison and practical limitations prevent duplication of the conditions to be found outdoors. For this reason, even if hundreds and hundreds of "units" of

light were produced in the home, the results might be annoying. Conversely, in the majority of homes, lighting levels are so pitifully low that eyes are "starved" for adequate light of good quality.

#### How to Obtain Eye Comfort Illumination

There are four lighting requirements for good seeability in the home:

1. Have light that is adequate for the seeing task to be done. (See Figure 1, page 2.)
2. Have light that is properly diffused, directed, and distributed.
3. Have light that is free from glare.
4. Have light that is free from severe contrast and harsh shadows.

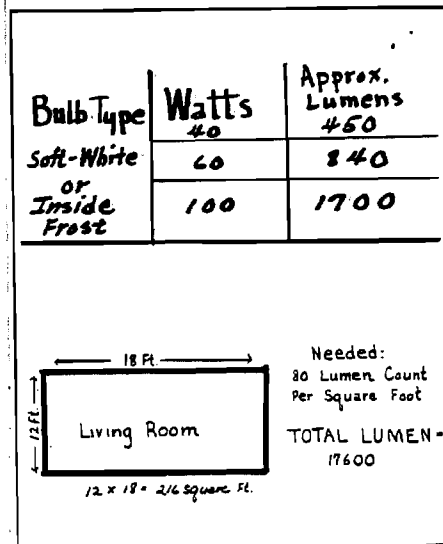


Figure 1



## BRAILLE

### BRAILLE MAILING TUBES

#### Distributor:

American Printing House for the Blind  
1839 Frankfort Avenue  
Louisville, KY 40206 USA

Model Number: 1-0410

Description: Braille mailing tube kit. Heavy cardboard tubes 11 3/4 x 1 in, designed for mailing up to 4 sheets of braille; with address mailing labels.  
Price: \$2.25/kit (40 tubes and 40 labels).

Model Number: 1-0411

Description: Mailing labels only.  
Price: \$1.10/100.

### BRAILON BINDERS

#### Distributor:

American Thermoform Corp.  
8640 Slauson Avenue  
Pico Rivera, CA 90660 USA

Model Number: Not available

Description: Minimum order, 12 binders.

Multi-O 22-Ring Binder	Price/Binder, \$
12+, 1 in	3.30
144+, 1 in	3.15
12+, 1 1/4 in	3.85
144+, 1 1/4 in	3.70
GMC 19-Ring Binder	Price/Binder, \$
12+, 1 1/4 in	3.55
144+, 1 1/4 in	3.40
12+, 1 3/4 in	4.45
144+, 1 3/4 in	4.30

### HAMILTON PLATFORM POSTAL SCALE

#### Distributor:

American Foundation for the Blind  
15 West 16th Street  
New York, NY 10011 USA

Model Number: SCM176

Description: 16-oz capacity. Platform springless scale. Adjustment screw for off-level surface. Read by placing flat of finger against stationary pointer when movable dial stops. Dimensions: 5 1/4 x 5 1/4 x 2 1/2 in. Platform: 2 3/4 x 3 1/4 in. Single raised dot at each oz interval, double raised dots at 0, 5, 10, and 15 oz.  
Price: \$8.95

### IBM BRAILLE OUTPUT PRINTER

#### Distributor:

IBM Corporation  
Office Products Division  
Parson's Pond Drive  
Franklin Lakes, NJ 07417 USA

Model Number: Not available

Description: An operator interchangeable device that will convert on IBM 1403 Model II or 1403 Model N1 Printer from standard printing to braille printing in less than 10 min conversion time. This printer will produce braille output in form of either simple single-run

throw-away copy or permanent text book-type copy. The IBM 1403 N1 Printer can produce up to 19,000 braille characters/min (366 braille lines/min). The 1403 Model II Printer can produce up to 10,400 braille characters/min (200 braille lines/min). Those interested may contact their local IBM branch office or the IBM Office Products Division for further information, demonstrations, and price quotations.

### LAVENDER BRAILLEWRITER

#### Distributor:

American Printing House for the Blind  
1839 Frankfort Avenue  
Louisville, KY 40206 USA

Model Number: 1-0083

Description: Machine is 16 1/2 x 7 x 4 1/4 in over all. Weight: 9 1/2 lbs; maximum page is 11 1/2 in width length, permitting writing of 40 cells on 11 in page; lift-off cover, with carrying handle attached frame.

Price: \$115.00

### LOKEY POCKET BRAILLER

#### Distributor:

Lokey Tool, Inc.  
220 Juana Avenue  
San Leandro, CA 94577 USA

Model Number: Not available

Description: Pocket size braillewriter measuring 1 1/4 x 1 1/4 x 10 in and weighing 8 oz. Has 6 keys, numbered 1-6 that correspond to dots of braille cell. Space bar is provided for manual spacing only. Carriage advances

automatically when 1 or combination of keys are depressed. Two counter-rotating rubber rollers hold and guide braille paper, and permit horizontal- and vertical-line register.

### POCKET SLATES

#### Distributor:

Howe Press of Perkins School for the Blind  
175 North Beacon Street  
Watertown, MA 02172 USA

Prices include 1 stylus. All slates now have 2 additional slots for embossing Dymo tape.

Model Number: 1

Description: 4-line, 27-cell, lightweight aluminum.  
Price: \$2.65

Model Number: 2

Description: 6-line, 19 cell, postcard size, lightweight aluminum.  
Price: \$2.65

Model Number: 11

Description: 4-line, 27-cell, nickel-plated brass, same size as Model No. 1; recommended for school use.  
Price: \$2.75

Model Number: 137X

Description: 4-line, 37-cell, nickel-plated brass, used without board.  
Price: \$3.15

### SINGLE-LINE SLATE

#### Distributor:

Howe Press of Perkins School for the Blind  
175 North Beacon Street  
Watertown, MA 02172 USA

Model Number: Not available

Description: Single-line, 25-cell, slate with stylus. For use with Dymo tape.  
Price: \$3.00

### UPWARD WRITING BRAILLE SLATE

#### Distributor:

Orbit Products Co.  
Rt. 1 Box 76  
Villa Ridge, MO 63089 USA

Model Number: Not available

Description: Slate comes with small supply of paper and stylus.  
Price: \$3.00

### **AUDIO RESPONSE TIME-SHARING SYSTEM (ARTS)**

**Distributor:**

American Systems, Inc., (ASI)  
123 Water Street  
Watertown, MA 2172 USA

**Model Number:** Not available

**Description:** Speech and teleprocessing system coupled to ASI-developed time-sharing system. Provides auditory and tactile sensory aid services to blind persons working or studying from home, school, or office. Audio-response component is large vocabulary speech unit that permits large number of remotely located users to telephone system's time-shared applications computer and operate services with verbal reply. Subscriber may also store additional information for future reference, or command computer to provide voice, braille, and/or print copies. Costs, programs, and services are negotiable with distributor. System also used for computer-aided instruction and braille production.  
**Price:** Negotiable with distributor.

### **EXTOBRIL**

**Distributor:**

Israel Electro-Optical Industry Ltd.  
P.O. Box 1165  
Rehovot 76110, Israel

**Model Number:** 5912

**Description:** Compact instrument that electronically recognizes and converts printed text materials into embossed Grade I braille on continuous paper tape at adjustable rate of speed. Self-focusing. Adjusts automatically to type font being read. Average printing speed: 15 braille characters/s. Power requirements: 220-240 V, 50 Hz or 110-115 V, 60 Hz.  
**Price:** With delivery terms, available from distributor.

### **VERTICAL BRAILLE COMPUTER PROGRAM**

**Distributor:**

Bradford Computer & Systems, Inc.  
220 East 42nd Street  
New York, NY 10007 USA

**Model Number:** Not available

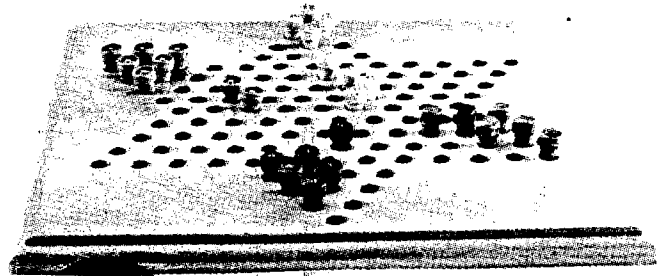
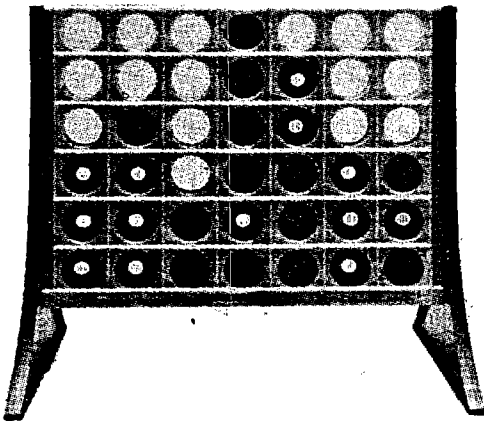
**Description:** Vertical Brailier, computer program for formatting output, prints lines vertically. Normal 132-character line requires 5 vertical pages. Program can also print horizontally, producing 40 characters/line. Braille is produced by period on print chain of 1403 printer (made by IBM) loaded with soft backing to produce embossing. Input can be from tape or disc of any length. Truncation feature prevents repetition of any character more than 3 times, eliminating long gaps. To

## GAMES

Bowling - Bowling rails provide bannister guides. 9' long; canvas carrying bag included. Does not require attachment to alley floor.

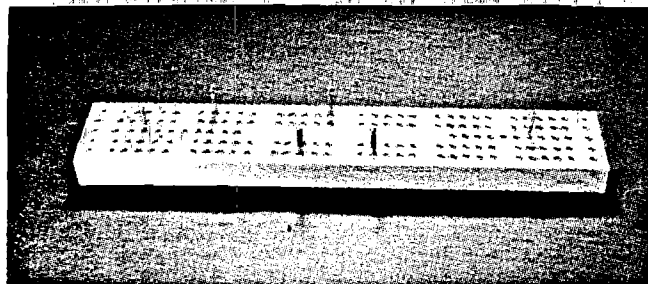


Chinese Checkers - Cherry board; drilled holes. Six different-shaped pegs.

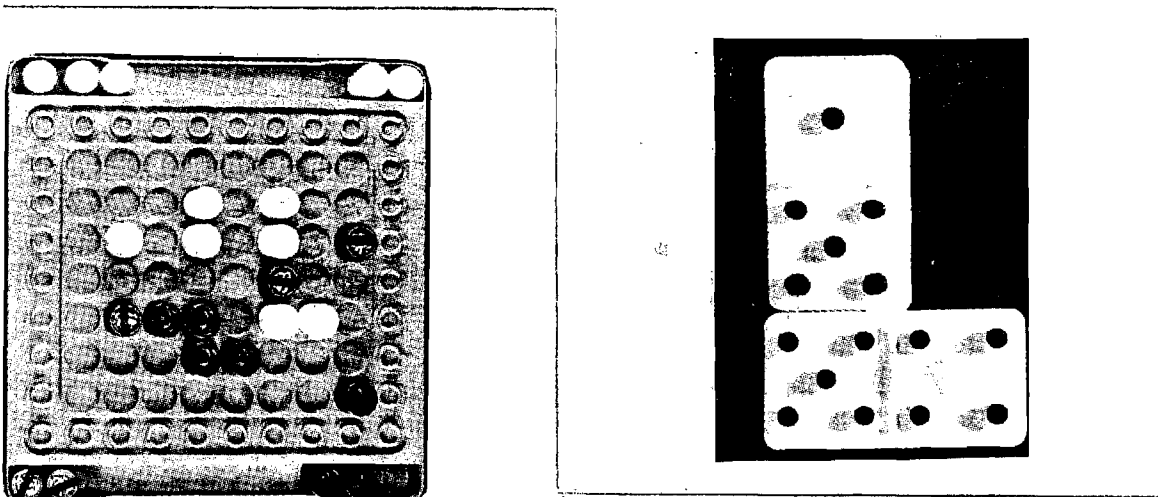


Connect Four - Contrasting color pieces for 2-person vertical strategy game. Ages 7-adult.

Cribbage - Raised scoring holes. Marked pegs. Sliding tray underneath wood board holds pieces.

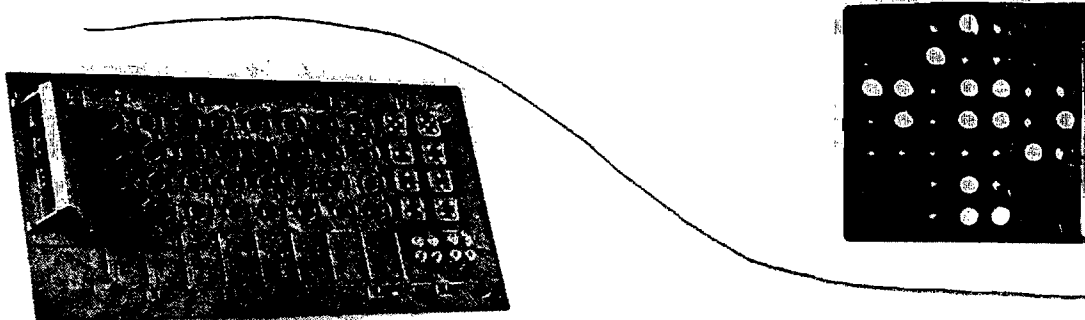


Dominoes - Large black dots identify the blocks. Green flet included to provide color contrast and reduce slippage.



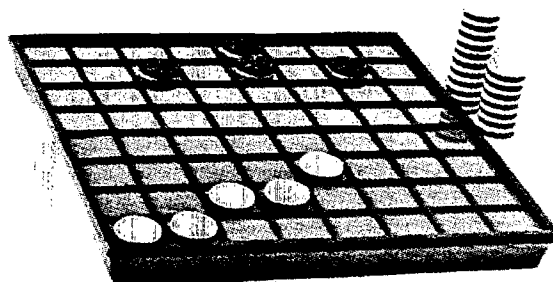
Ergo - Based on ancient Roman game. Black and white pieces for color contrast. Black pieces are notched. Ages 8-adult.

Hi Q Puzzle - For one player. Pegs are to be removed by jumping them.

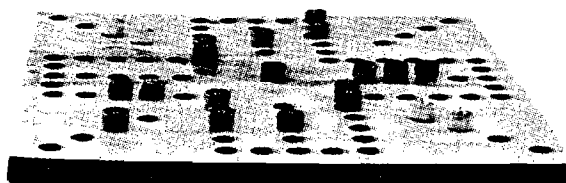


Mastermind - Requires wits and logic, luck and skill. Print instructions included.

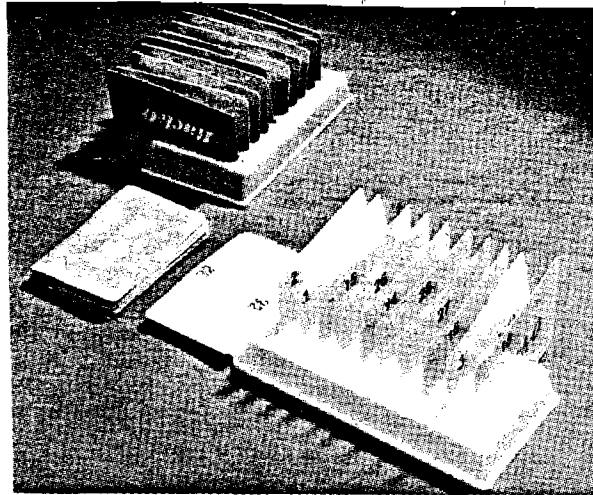
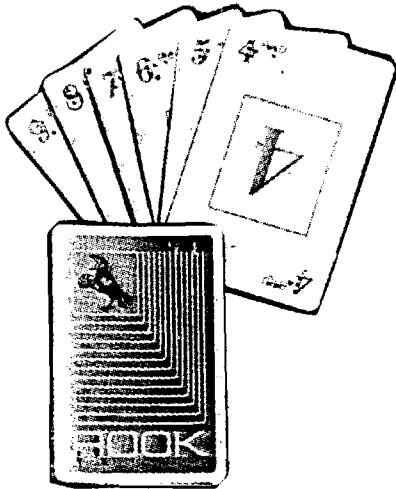
Othello - Flip-open magnetic board. Raised ridges hold discs in squares. Black pieces have inner ring; white ones are smooth.



Parchessi - Four differently-shaped pegs; safety spaces provided by extra holes outside pattern. Birchwood board. Dice included.

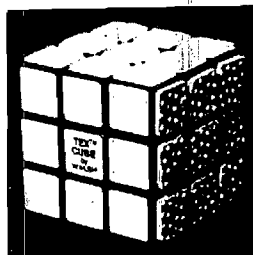


Rack-0 - Tactually marked card game. Printed numbers are not sized for low-vision players. For 2-to-4 players.

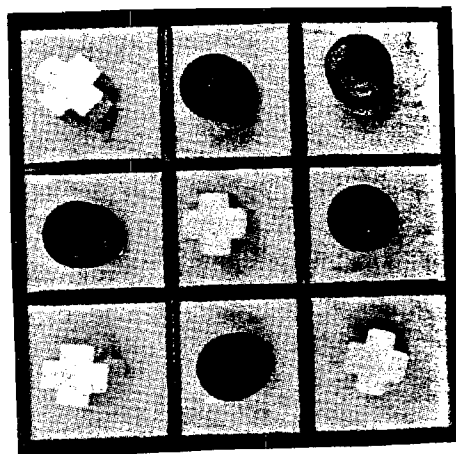


Rook - 23-variation card game. Brailled cards. Print identification is not sized for low-vision players.

Tex-Cube - Cub puzzle. Each side has a different texture.



Tic-Tac-Toe - Pegboard version. Black and white pieces for color contrast.



All sold by: American Foundation for the Blind  
15 West 16th Street  
New York NY 10011

## PERSONAL CARE

All Purpose Utility Bag. Black leather-like vinyl. Three compartments. Wrist strap and belt loop.



Sold by: Independent Living Aids  
11 Commercial Court  
Plainview NJ 11803

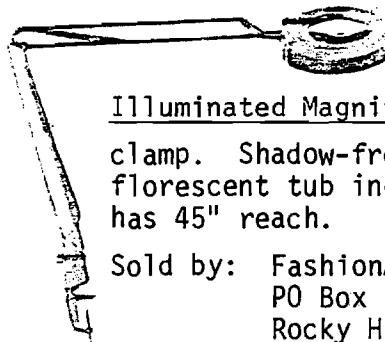
Folding Magnifier. Thin compact glass folds into its own leatherette case. Distortion free.

Sold by: Independent Living Aids (see above)



Illuminated Magnifier. Mounting clamp. Shadow-free light. 22-W florescent tub included. Arm has 45" reach.

Sold by: FashionAble  
PO Box "S"  
Rocky Hill NJ 08553  
609-921-2563

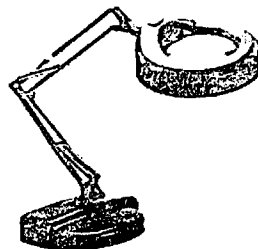


Large Print Telephone Dial. Raised white numbers; self-adhesive back. Fits standard phones.

Sold by: Independent Living Aids  
(see above)

Weighted Base Magnifier. 30" reach.

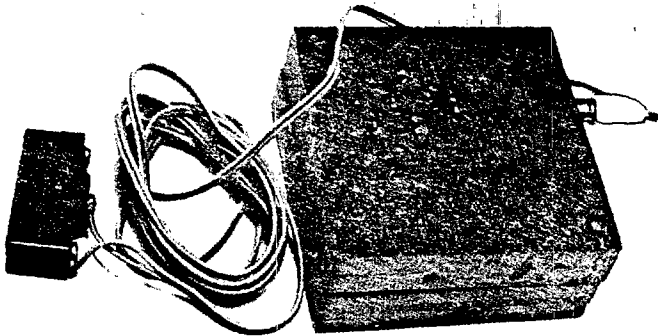
Sold by: FashionAble  
(see above)



## TOOLS

### CARPENTRY

#### Audible Signal Device, Lathe Work Alignment.



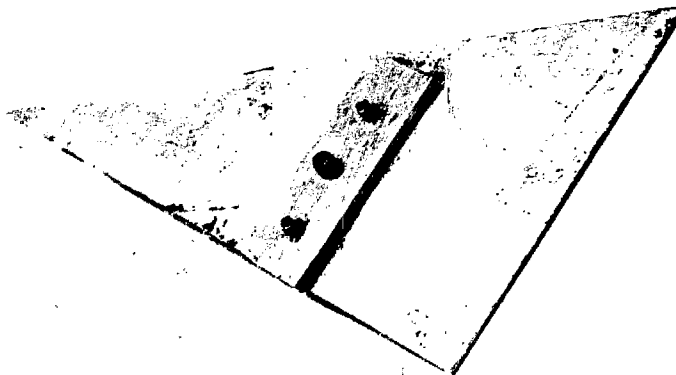
Signal button in four-jaw chuck. Can be positioned to indicate correct alignment or for warning of carriage travel.

Product is not manufactured.

For information, contact:

Jerome Golner  
Golner Precision Products  
354 Cottonwood Avenue  
Hartland WI 53029

Mr. Golner can also be contacted about two other lathe-working tools: the Tool Adjusting Block, to move the lathe tool holder in precise degrees, and the Triangle Lathe Set Up, to line up the compound at 0°, 30° and 90° against the lathe's chuck (pictured below).



Levels. Manual - Steel ball in a 6 1/4" trough determines if horizontal surface is level.



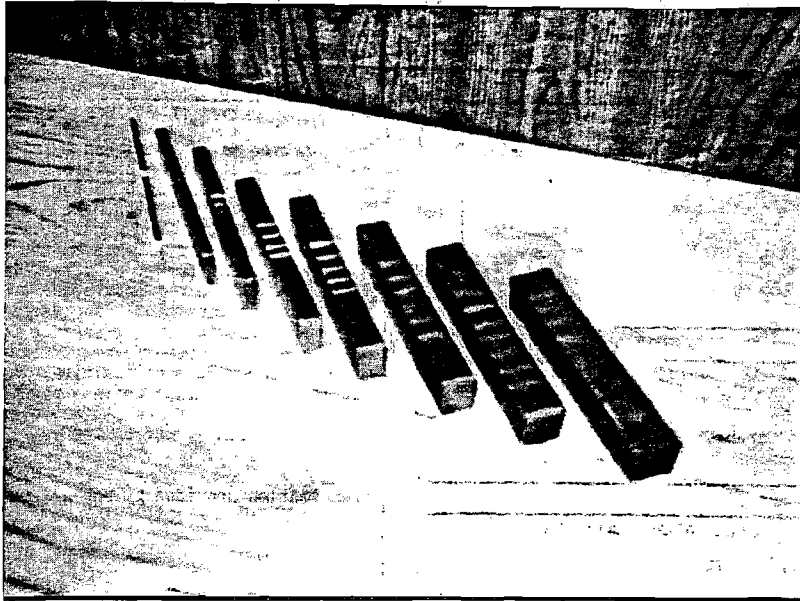
Electronic level emits audible tone for both horizontal and vertical leveling.



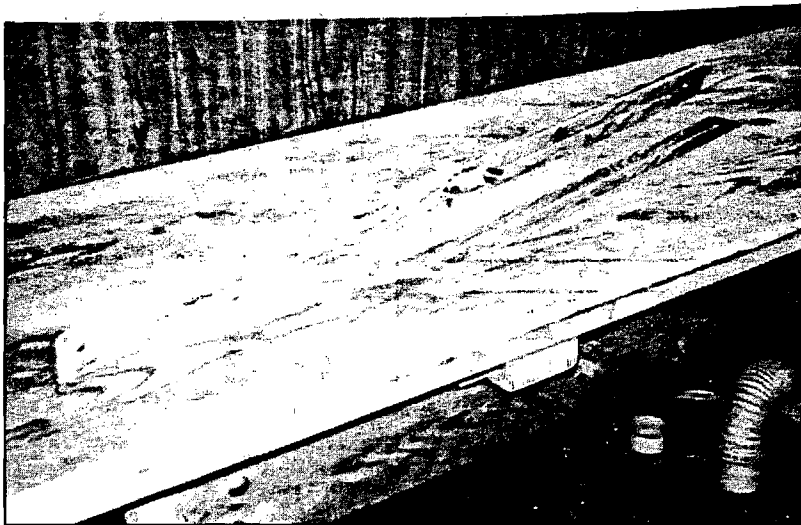
Both sold by: American Federation for the Blind  
15 West 16th Street  
New York NY 10011  
212-620-2169

Measuring Devices. To be made.

For more information, contact Russ Gage  
4820 S. 20th St.  
Milwaukee WI 53221  
414-281-0076



- a) Dadoing device. 6" metal pieces vary in thickness, from 1/8" to 1". Grooves in each piece serve as a cross-measurement. For making precise cuts in wood or other materials.
- b) Shelf & Paneling Measurement. Slide measuring device made from paneling; length can vary. 1/4" center groove in two boards with wing-nut fasteners. Together, boards are used as a 'sliding ruler.'



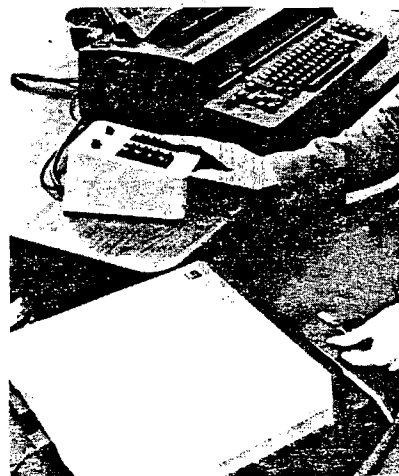


## COMPUTERS AND RELATED DEVICES

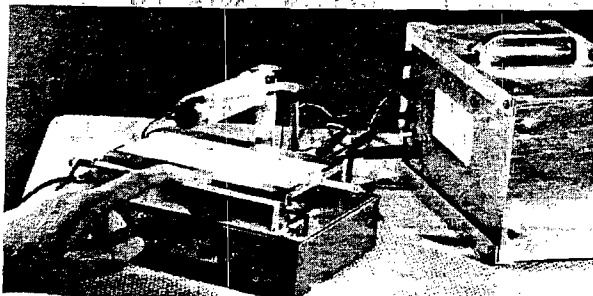
Audio Typing Unit. Must be attached to IBM Mag Card/A or II or Memory Typewriter or Memory 100. Produces unlimited synthetic speech. Consists of audio keypad, audio console, and optional headset. Allows proofing of typed material.

Sold by: IBM Corporation  
400 Parsons Pond Drive  
Franklin Lakes NJ 07417  
201-848-1900

(Lease also available)



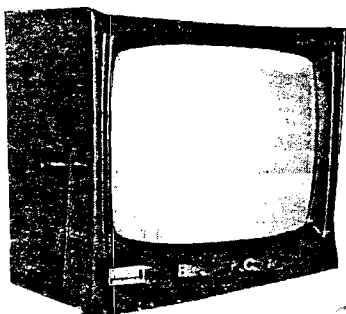
Card Reader with Tactile or Voice Output. Reads IBM punch cards.



For information, contact:

J.C. Swail  
Natl. Research Council M50  
Dee R182 Montreal Rd.  
Ottawa Ontario Canada  
K1A 0R8

Cathode Ray Tube Viewing System. Magnifies CRT display by approximately 20X with 2" high letters. "Retractable" assembly can be slid out of the way for access to the CRT.



Sold by:

Visualteck  
1610 26th Street  
Santa Monica CA 90404  
213-829-6841

Kurzweil Data Entry Machine.



Computer-based braille translator and braille embosser convert printed material to braille.

Sold by: Kurzweil Computer Products, Inc.  
33 Cambridge Parkway  
Cambridge MA 02142  
617-864-4700

Kurzweil Reading Machine.



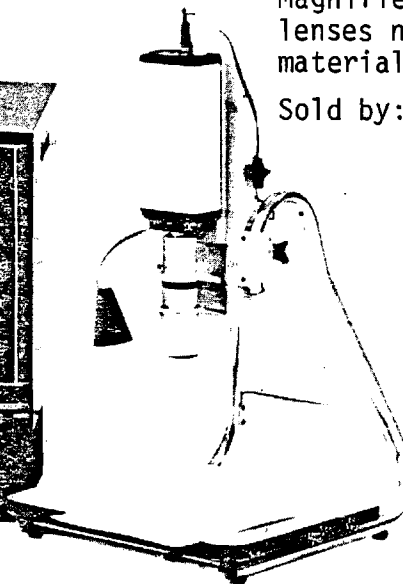
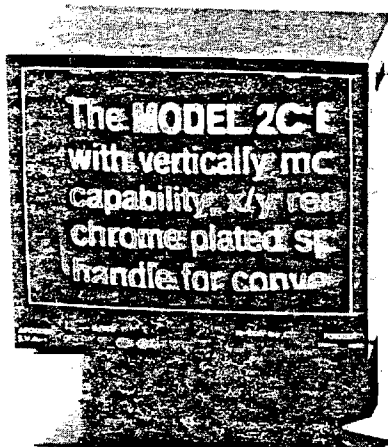
Electronic voice reads material placed face-down on the glass. Can also be used with computers and CRT terminals.

Sold by: Kurzweil Computer Products, Inc.  
see above

Model 2C Electronic Visual Aids.

CRT viewing monitor and stand. Magnifies up to 60X. No closeup lenses needed. For ink-printed material.

Sold by: Apollo Electronic Visual Aids  
6357 Arizona Circle  
Los Angeles CA 90045  
213-776-3343



Orator Talking Terminal. Software package in PROMs with keyboard and synthesizer. RS232C compatible. Can be set to pronounce whole words or spell. Capitalization, punctuation optional.

Sold by: ARTS Computer Products  
80 Boylston St.  
Suite 1260  
Boston MA 02116  
617-482-8248

Paper Money Identifier. Uses 2 penlite batteries. Scanning back of bill produces unique denomination tones.

Sold by: American Foundation for the Blind  
15 West 16th Street  
New York NY 10011



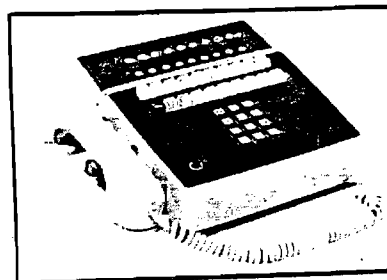
Receptionist Mat. Alerts receptionist or other persons to silent visitor. Attached by cable to alarm box at desk if person remains standing on mat for a few seconds- walking over the mat does not produce signal. Not for sale, still in prototype stage.

For information, contact: Smith-Kettlewell  
Engineering Center  
2232 Webster St.  
San Francisco CA 94115  
415-651-1619

Touch Fone Adaptor.

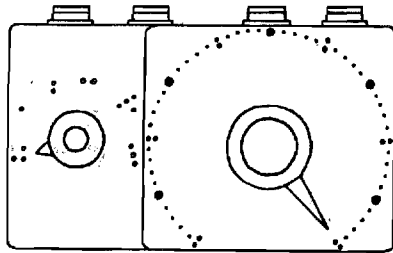
Replaces top row of switches in 20-button phone, allows operator to determine individual line status by running fingertips across assembly.

Sold by: Telephonic Equipment  
17401 Armstrong Avenue  
Irvine CA 92714  
714-546-7900



ELECTRONIC/AUTO REPAIR

Aud-A-Meters. In single-channel, 4-channel and professional models. May be connected to any electrically driven visual meter; auditory signal is correlated to a braille scale.



Sold by: Science Products for the Blind  
Box 385  
Wayne PA 19087  
215-687-3731

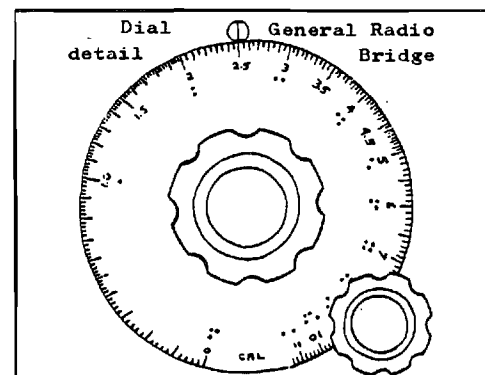
Engine Tuneup Meter. Auditory and tactile readout. Modification of Heathkit CM2045. Not for sale.

For information contact: J.C. Swail  
Nat'l. Research Council M50  
Dee R182 Montreal Rd.  
Ottawa Ontario Canada  
K1A 0R8



Impedence Bridge. Measures AC/DC resistance, inductance, figure of merit Q of coil, capacitance, dissipation Factor D. Accuracy 3 to 20%. Cassette instructions.

Order from: Science Products for the Blind  
see above



Modified Dwell Tachometer. Tests engine RPM, transmission shift points, cylinder balance, Dwell measurement. Secondary and primary testing circuit models also available.

Sold by: Science Products for the Blind

Modified Gauges. Snap-on brand. Company will also modify gauges of your choice. Standard models include:  
Air-Conditioner analyzer (Auto)  
Compression gauges  
Gauge with kit of adapters  
Vacuum/Fuel Pump gauge.

Sold by: Science Products for the Blind

Modified Ignition Analyzer. Tests coil resistance; battery voltage; voltage regulator; pick-up coil; spark plugs and wires; cranking circuit; ballast resistor.

Sold by: Science Products for the Blind

Tac-Torque. Snap-on brand. 100" and 100 and 200 lb. models available. Personal wrenches also modified if possible.

Sold by: Science Products for the Blind

Talking Digital Multimeter. Independent meter. Measures AC and DC, .001mA to 10A, .1 ohm to 2 megohms.

Sold by: Science Products for the Blind

Talking Voltmeter. On demand or continuous spoken output. Can be used with existing meter or varying voltage. Overrange alarms and PEAK memory.

Sold by: Sensory Interface Equipment, Inc.  
4442 Kasson Road  
Syracuse NY 13215  
315-469-7182

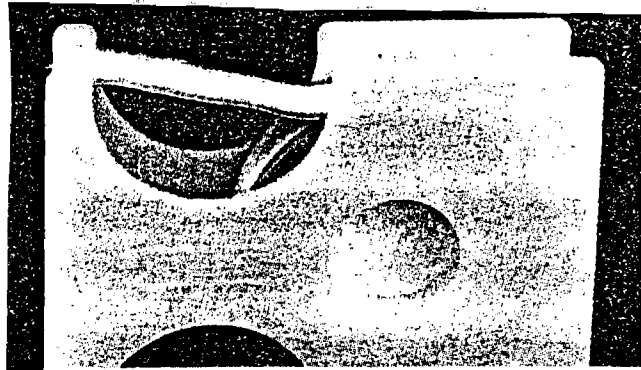
MISCELLANEOUS

Ham Transmitter/Tuner. Can be used on all ham equipment. Pitch indicator and braille calibrated voltage standard for more precise measurements. Schematics only.

Available from: Smith-Kettlewell  
see above

Labels. Plastic pressure-sensitive tape in dispenser. Can be brailled and cut.

Sold by: American Foundation for the Blind  
see above



Voxcom Kit. Self-contained unit records and plays back talking labels, files, records, recipes, messages, etc. on 50 pretaped cards. Card is inserted into machine. Batteries included.

Sold by: CAL Distributors  
2002 Forest Hill Drive  
Silver Spring MD 20903  
301-434-7748

SEWING

Bernina Sewing Machine. Model 830H has features for easier operation by visually impaired persons: slot (no eyes) threading; width, length, needle position and buttonhole dials on knob with large projections. Tactile markings on stitch selection lever. Large knob feed-dog mechanism.

Sold by: Fritz Gegauf Limited  
Seestrasse  
8266 Stecborn  
Switzerland  
(054) 8 29 21



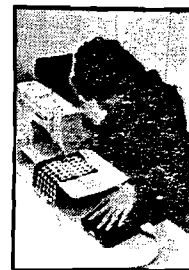
Handwheel Key



Needle Finger-Guard



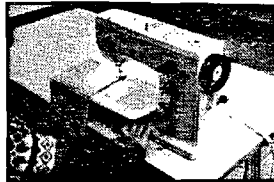
Bobbin Holder



Speed Regulator



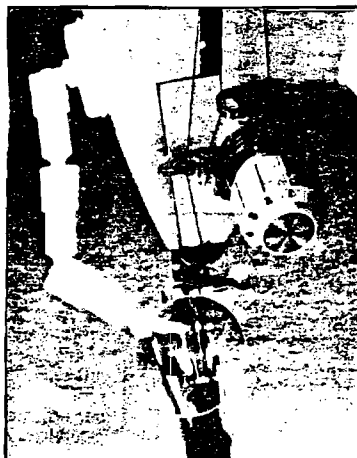
Dials



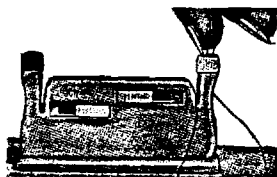
Presser-Foot Lifter

Magnifier for Sewing Machine. Flexible plastic attaches to side of sewing machine; helps guide thread into needle.

Sold by: American Foundation for the Blind  
see above

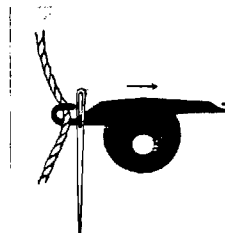


From: Independent Living Aids  
11 Commercial Court  
Plainview NJ 11803

**INFILA AUTOMATIC NEEDLE THREADER**

384222—\$1.95

Automatically threads large needles or thin needles. Simple push button operation for single or double threading.

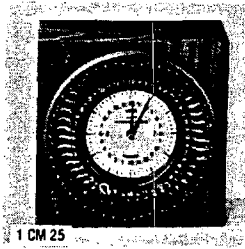
**YARN THREADER**

861222—\$.60

Exclusive "self threading" feature for quick and easy operation

## WATCHES, CLOCKS

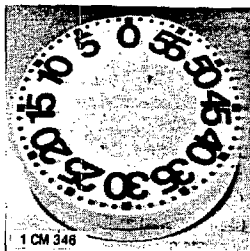
### James Remind-O-Timer.



24-hour multiple time switch with 48 movable pins, with pins controlling each hour marked by single raised dot. Clock dial markings of three dots for 3, 6 and 9 A.M. and P.M. Capacity of up to 1000 watts. AC current only.

Sold by: American Foundation for the Blind  
15 West 16th Street  
New York NY 10011

### Large Digit, Long-Ring Timer.



3/4" black numbers on yellow background. One-hour maximum timer. Hangs or sits on counter.

Sold by: American Foundation for the Blind

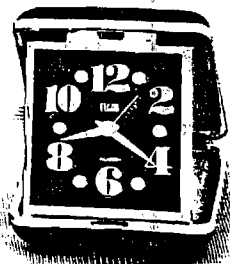
### Low-Vision Watches.



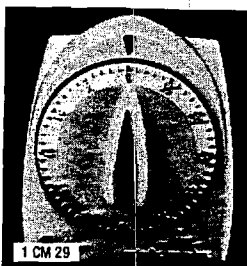
Quartz battery-operated. Black dial with large white numbers at 3, 6, 9 and 12 (see picture). Available in men's and women's models, with leather or gold-finish expansion bands.

Sold by: Independent Living Aids  
11 Commercial Court  
Plainview NJ 11803

Also, Low-Vision Travel Alarm (pictured below).



### Lux Variable-Ring 60-Minute Timer.

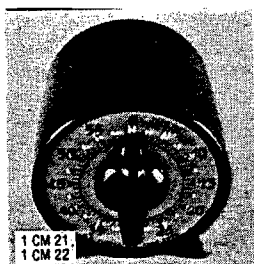


Duration of ring varies with time set, but adjustable for long at any setting. Raised mark for each minute; raised print numbers and mark every 5 minutes.

Sold by: American Foundation for the Blind (see above)

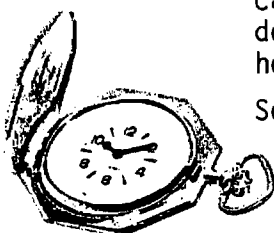


Marktime Timers. In 60-second and 60-minute models. Raised dots at 5-second or 2 1/2-minute intervals, triple dots at 15, 30 and 45 minute or second points.



Sold by: American Foundation for the Blind  
(see above)

Pocket Watch. Quartz battery-operated. Hexagon, gold finished case. No winding necessary. Triple dots at 12; double dots at 3, 6 and 9; single dots at other hours.

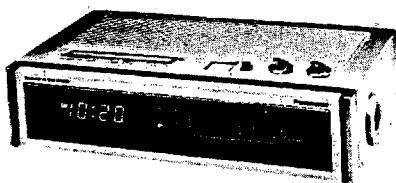


Sold by: Independent Living Aids  
(see above)

Sharp Talking Clock. Alarm (Verner's "Heiden Roslein") is preceded by 10 and 5-minute announcements. Time is announced 7 times per day. Also contains up-to-12 hour timer. Uses mercury battery.

Sold by: Zygo Industries, Inc.  
PO Box 1000  
Portland OR 97207  
503-297-4724

Talking Alarm Clock Radio. Panasonic. Calls out time automatically at intervals from 1 minute to 60 minutes. Voice and music chirp alarm. Power back up system. Silver case.



Sold by: American Foundation for the Blind

Talking Chimes Clock. Dual alarms; announces time, day and month at a touch; announces alarm times. Battery back-up. Westminster chimes; voice, chimes or combination times can be set for every quarter of the hour.



Sold by: Comfortably Yours  
52 West Hunter Avenue  
Maywood NJ 07607  
201-368-0400

Talking Desk Top Alarm Clock.



"Voice" button announces time.  
30 or 60-minute automatic time call.  
Dual alarms. Battery back-up.

Sold by: Independent Living Aids  
see above

Timemaster Electric Time Switch.

Turns appliances and lights off  
and on during 24-hour period.  
Not capable of exact minute settings;  
not for use with air conditioners.  
Raised dot dial. Appliance plugs  
into table model unit.

Sold by: American Foundation for the  
Blind (see above)

Timex Speak-Easy.

Time announcement on demand; voice or beep alarm.  
Dual alarms. Battery back-up. Snooz feature  
gives 3 calls.

Sold by: Timex Clock Company  
Watersbury CT



Voice Master Talking Watch.



Visual display includes seconds.  
Time announcement of hour and minute  
and A.M. or P.M. Automatic announcements  
on hour or half hour; time; alarm and  
alarm repeat. Travel pouch, desk stand  
included.

Sold by: Zygo Industries, Inc.  
PO Box 1000  
Portland OR 97207  
503-297-4724

## CUSHION TYPES

from "Cushion and Pad Fitting Procedure for the Wheelchair Confined Person,"  
E. Edberg, R.P.T.; N. Hervey; J. Rogers, M.S.  
Rancho Los Amigos Hospital Annual Progress Report No. 4 - 1975

- Active Seat Cushions - Air volume force is used to support the body. Alternating pressure pads (APP) alternately load and unload areas of potential tissue trauma. However, an alarm (visual or audible) must provide a warning of diminished pressure or flow for the cushion to be really safe. High pressure support should not be used for extended periods of time.
- Air Cushions - See the above. Air cushions do not alternate pressures like active cushions, but they still require alarms. Hammocking may result in tissue breakdown. Seating instability can also occur.
- Foam Cushions - Synthetic plastic or rubber foams have minimal viscosity. Polyurethane foam can be cut and built up to match individual needs. However, this material will lose elasticity.
- Gel Cushions - Silicone, vinyl and other gels are usually covered in a latex-type cover. The pad will return to its original shape when pressure is removed; it equalizes pressure, but does not by itself control pressure distribution. The pads tend to be heavy.
- Particle-Filled Cushions - "Bean bag" pads will distribute pressure as long as the supporting particles can be mobile. If the particle material is non-compressible and small, and lightweight, stability and pressure control may be limited.
- Solid-Formed Cushions - Cushions are molded. Problems occur when a person's body changes- growing, weighing more, or atrophying. Also, the person must remain seated in the pattern of the mold.
- Visco-Elastic Cushions - These pads provide reduced shear as long as as the containing envelope is not too restrictive. Like foam, the material results in equal pressure distribution, but its more stable. It is also heavier.
- Water Cushions - See air cushions. Water cushions are heavier than air ones; there is a potential for more difficulty in handling and more severe hammocking.

Note: foam may also be used as a baffle to add stability to gels, air, etc.

## CUSHIONS

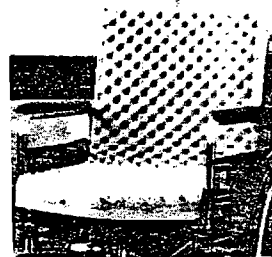
Carpet Covers - Dark gray nylon carpet-covers for footrests. Protects feet and furnishings. Tufted surface prevents slipping. Velcro strap fastener; carpet shampoo washable.

Sold by: Be OK  
Fred Sammons, Inc.  
Box 32  
Brookfield IL 60513  
Phone 800-323-7305

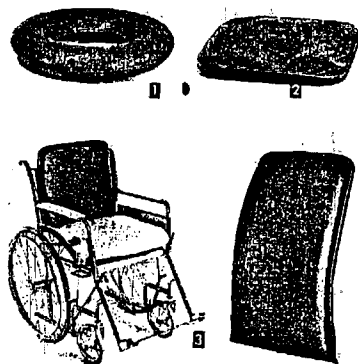


Cushion - Eggcrate construction. Covers back and seat of wheelchair, or available in seat only. Also sold as mattress. Flame retardant.

Sold by: FashionAble  
PO Box "S"  
Rocky Hill NJ 08553  
609-921-2563



Cushions - Sold in various styles: see below. Order through local Sears.



### Cushions for comfort and support

(1) Inflatable Rubber Cushion. Soft to firm support. CONSTRUCTION: Rubber. 18-in. diameter. About 3 inches thick when inflated.

ORDER INFO:  
8 KH 1086—Shipping weight 1 lb. 4 oz. .... \$19.99

(2) Flotation Cushion. More comfortable sitting due to even weight distribution.

CONSTRUCTION: 1-inch polyurethane foam with black vinyl cover. Valve allows you to add water to provide flotation. In use, cushion measures 16x16x1 1/2 in. high.

ORDER INFO:  
8 KH 1093—Shipping weight 1 lb. 6 oz. .... \$10.99

(3) Posture Back Support. For proper support while sitting in wheelchair, regular chair, car, etc. To use, bend slightly by hand. Place behind back. Will mold to the contours of your back.

CONSTRUCTION: Black vinyl exterior wipes clean. Interior of metal and plastic gives proper back support. Back straps help keep support in place. Measures 17x20 inches.

ORDER INFO:  
8 KH 1091—Shipping weight 3 lbs. 8 oz. .... \$29.99



**Now at Sears!**  
**Gel-Float Cushion with**  
**air-adjustable gel-flotation**  
Provides maximum comfort by helping to eliminate pressure points.

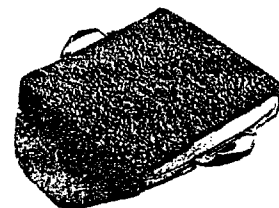
Sealed vinyl cushion has air hose with clamp. While sitting, press clamp, air escapes, conforming cushion to your body. Removable cover of polyester with fleecy softness of sheepskin for extra comfort. Machine wash, warm, tumble dry.

CONSTRUCTION: Cushion is vinyl with adjustable gel inside. Fits chair seats 16x16 inches.

ORDER INFO:  
Shipping weight 3 pounds 13 ounces.  
8 KH 1092 ..... \$89.99

Knoche Cushion - Floating silicone sealed in heavy-duty cover provides pressure balance. Medium-density foam covering. Removable linen and sheepskin covers. No plastic inner cover required.

Sold by: Invacare Corp.  
1200 Taylor Street  
PO Box 4028  
Elyria OH 44036  
216-365-9321



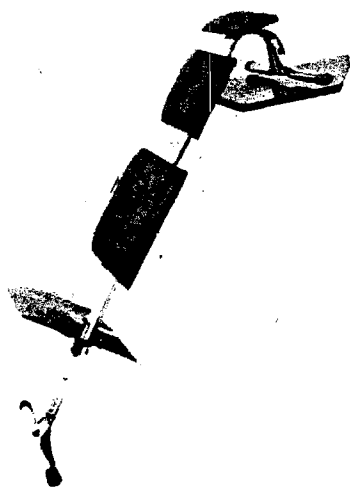
X-C-2000 - Liquid powder core; varying density foams. Nonslip chair contact surface; top and sides are sheepskin. Will not go flat.

Sold by: Anderson Industries, Inc.

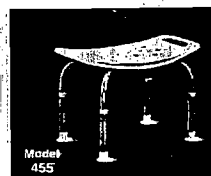
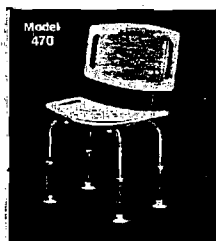


### SEATS

Aronson Prone Stander. Pads and foot rest may be interchanged, are adjustable. Vinyl. Coated foot rests. Holds up to 200 lbs. For children.



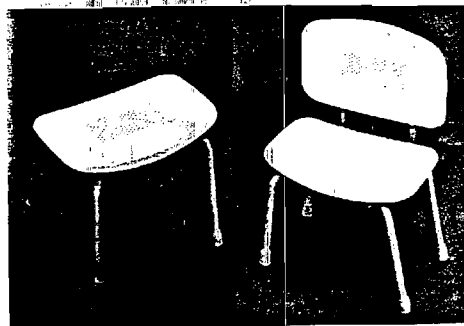
Sold by: Modular Medical Corp.  
1558 Hutchinson River Pkwy. E.  
Bronx NY 10461  
212-829-2626



Bath/Shower Benches. Seats and back of high-density polyethylene; steel frame. Non-slip rubber tips. Varying sizes.

Sold by: Orthopedic Splintz, Inc.  
147 Albany Avenue  
Lindhurst NY 11757  
576-226-1811

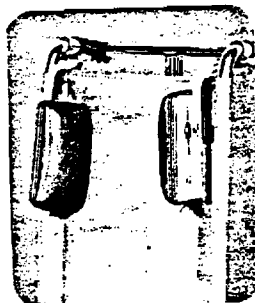
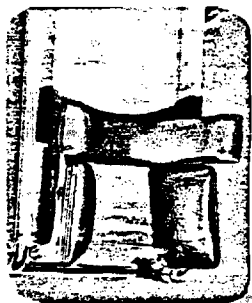
Bath/Transfer Tub Seats. Varying styles, including padded and extra-long extension legs. Plastic seat and back; sand-colored frame.



Sold by: Lumex, Inc.  
100 Spence St.  
Bay Shore NY 11706  
516-273-2200

Headwings. With and without neckrest, or Velcro straps for head positioning.

Sold by: Modular Medical Corp. (see above)



Saf-T-Straint. With dual torso restraint pads. Adjustable.

Sold by: Collins Industries, Inc.

PO Box 58

Hutchinson KS 67501

316-663-4441



Security Poncho.

Prevents sliding out of wheelchair. Foam filled crotch piece; urineproof cover available. Poncho made of double-knit fabric; two sizes.

Sold by: Skil-Care Corp.



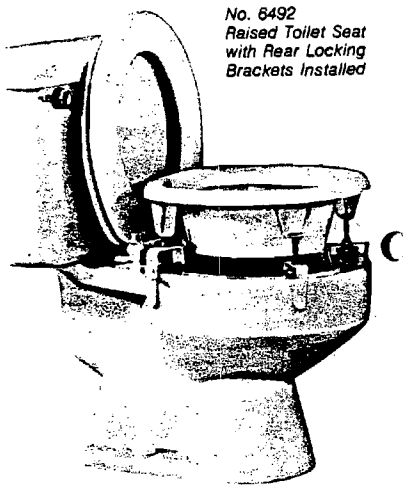
Straps/Belts. Varying styles. Sold by: Modular Medical Corp. (see above)



Supports/Straps. Varying styles. Sold by: Fred Sammons (see above)

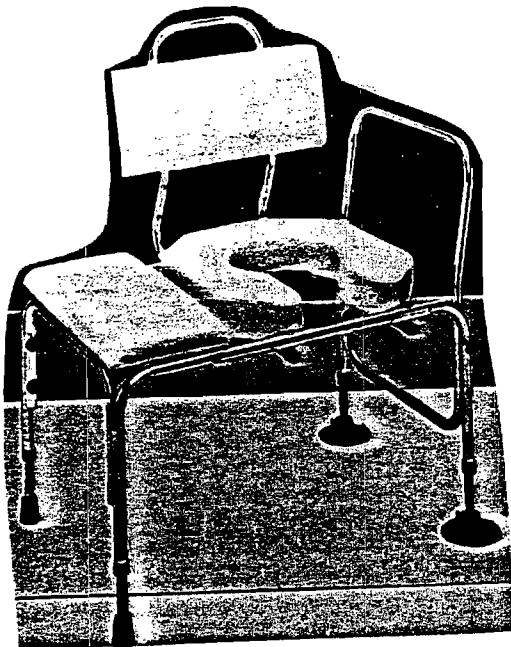


Toilet Seats and Frame. Raised, cushioned locking models of seats.  
Sold by: Lumex, Inc. (see above)



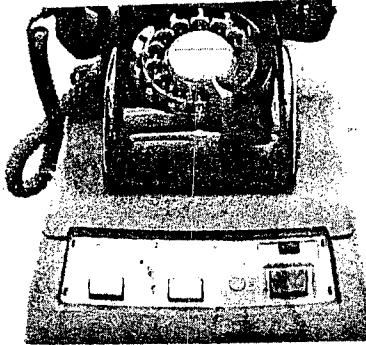
No. 6492  
Raised Toilet Seat  
with Rear Locking  
Brackets Installed

Tub Transfer Bench with Open Front Seat. Padded. Inside tub legs  
with suction cups.  
Sold by: Lumex, Inc.  
(see above)



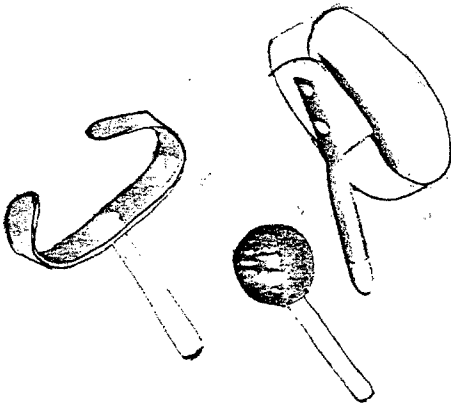
## ENVIRONMENTAL CONTROLS

Anshin Phone. Dials numbers - red for emergencies, green for family or friends - automatically when phone is set on it. Also amplifies voices.



Sold by: Japan Sun Info. Center  
4-2-23 Shinjuku-ku  
Tokyo Japan

Dial Turner. Cuff attachment. For information, contact:  
Japan Sun Info. Center (see above)



Dycem. Non slip plastic.

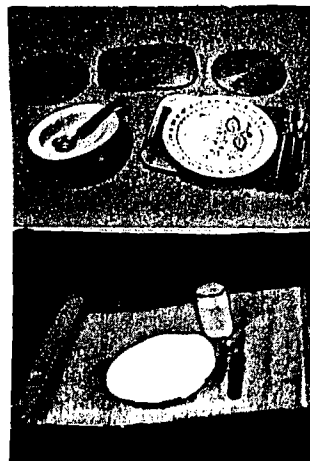
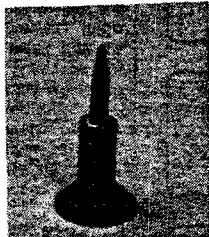
Blue color only. Available  
in square and rectangular pads  
and by the yard.

Sold by: Fred Sammons  
Box 32  
Brookfield IL 6513  
800-323-7305

Easy Grasp Pencil. Large

part of holder fits into  
palm of hand.

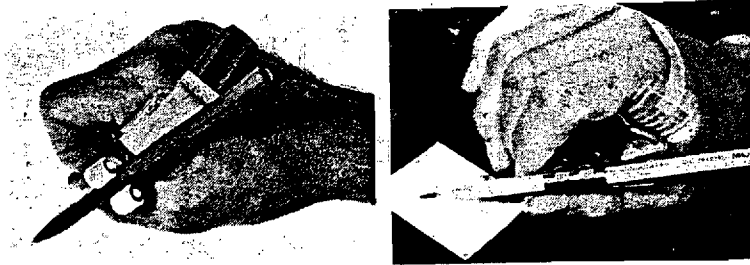
Sold by: Northern Wisconsin Center  
for the Developmentally  
Disabled  
Box 340  
Chippewa Falls WI 54729  
719-723-5542





Klick Pencil Holder. Click signals jaws and rollers have gripped pencil. Pliable metal frame. Fits utensil holder.

Sold by: Fred Sammons (see above)



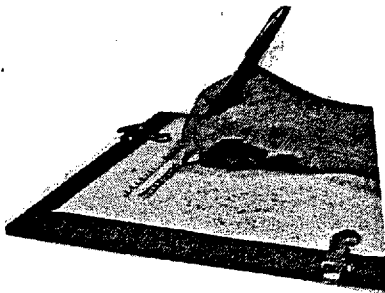
Magazines and Bookholders. Attach to furniture or equipment. Hand or mouthstick may turn pages.

Sold by: C. Beil Designs  
5435 N. Artesian Avenue  
Chicago IL 60625

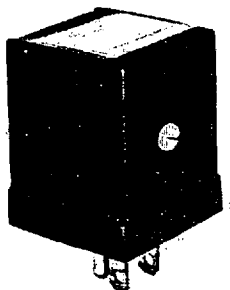
or: Fred Sammons (see above)

One-Handed Writing Board. Locks paper in place for writing. Rubber feet hold board steady. Right or left hand models.

Sold by: Fred Sammons (see above)



Prentke Romich Products. Address: RD 2, Box 191  
Shreve OH 44676  
216-567-2906



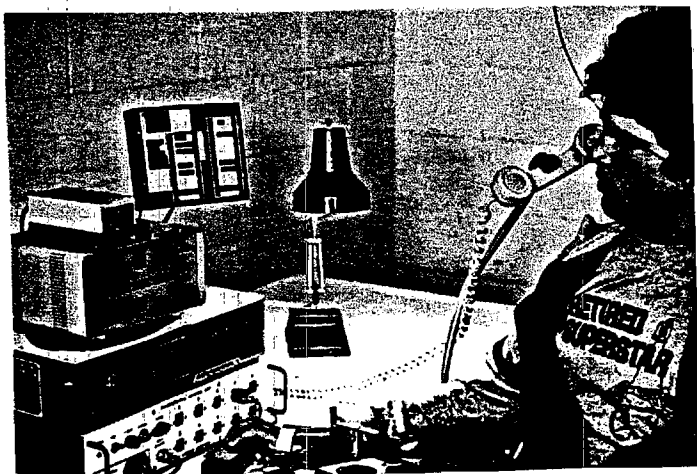
## **Buzze**

This device is useful as a call or alarm system. The buzzer plugs directly into an ECU power receptacle. When the channel is turned on the Buzzer is activated.

**Functional Goal:** Independent means to alert another person within the immediate area.

**Justification:** Safety within hospital, home, school or work setting.

As a result of severe physical impairment, many people are unable to perform tasks normally suited to able-bodied people. When operation of electrical devices is desired, frequently the device or the method of operation can be adapted to fit the capabilities of the physically handicapped.



## How does an Environmental Control System work?

Since the primary ECU user group is high level spinal cord-injured quadriplegics, the systems have been designed to accommodate their capabilities and needs. The general approach requires two user actions: one to select the function to be performed, the other to operate that function.

The user action is communicated to the system via a control interface: usually a dual control switch such as the Rocking Lever, Tongue Switch or Pneumatic Switch. These require physical movement or blowing and sucking on a tube. Consistency and reliability of the potential user actions will determine the appropriate interface.

Generally the ECU has a display that shows the user what has been selected. This may take the form of a panel of indicator lamps, each corresponding to a particular function or channel. Only one lamp is lighted, indicating the selected function. To select a desired function, the user activates the SELECT portion of the control interface; for example, sucking on the Pneumatic Switch tube.

Once the user has selected the desired function, operation is via the other portion of the control interface; for example, blowing on the Pneumatic Switch tube.

## How is an Environmental Control System selected?

The decision to use an environmental control system lies primarily with the handicapped individual. Selection should depend upon the appliances desired to be controlled and the environment and position from which they will be controlled. Frequently, a system is controlled from two positions: the bed and the wheelchair. Selection and placement should keep these positions in mind.

Once the individual's needs are known, the appropriate control switch is selected. (See General Catalog, **Electronic Aids for the Severely Handicapped**). The specific environmental control unit is then selected with consideration for the current as well as future appliances to be accommodated. The chart on page 3 compares PRC's ECUs. When selecting an ECU, these questions may be helpful:

1. How many AC appliances will be controlled?
2. Does user want on/off control of radio and TV only or tuning capabilities as well? (consider AFR and TCS)
3. Is wireless control of appliances desired? (consider ECU-3)
4. Is control from a wheelchair desired? (consider Radio Remote Receiver/Rocking Lever Radio Transmitter (RRR/RLRT) or infrared from DU-IT Wheelchair System page 12).
5. Is control of an ECU from DU-IT Wheelchair System desired? (consider Infrared Remote Receiver/Infrared Remote Transmitter, IRR/IRT available from DU-IT, see page 12).
6. Is telephone directory storage desired? (consider ECU-3)
7. Is separate input display important? (consider ECU-1 or ECU-3). This approach permits the main control box and connecting wires to be placed out of view of the user.

## Where can an Environmental Control System be used?

An Environmental Control System is appropriate in settings where an individual has the need to exert control over the environment. Frequently, environmental control systems are utilized in hospitals, rehabilitation settings, nursing homes, private residences, as well as within educational and work settings.

## What is an Environmental Control Unit (ECU)?

An ECU permits the severely handicapped individual to control electrical devices in the home, hospital or work setting without assistance. Lights, radio, television, intercom, TV signal, electric bed, for example, may be operated independently. The objective of the ECU is to use technology to facilitate the operator's control over the environment, to promote independence and to improve the quality of life.

The components comprising an environmental control system are: the **control switch**, the **main control unit** and the **devices to be controlled**. Each must be ordered separately, depending on the needs and capabilities of the user.

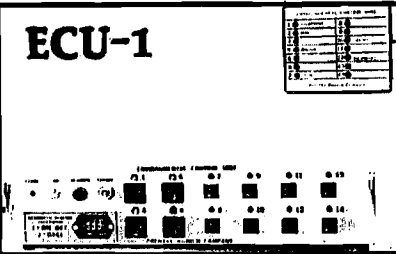
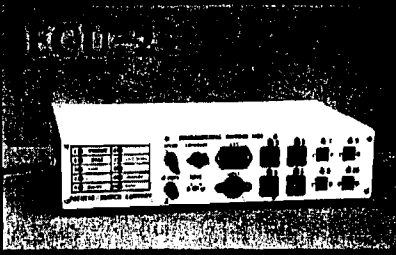
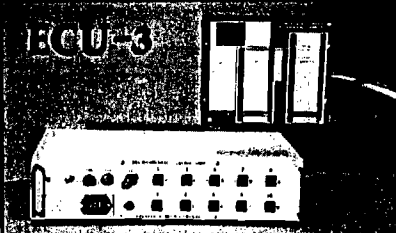
PRC manufactures three environmental control systems, ECU-1, ECU-2 and ECU-3. The comparative chart on page 3 shows the features of these systems.

## Who benefits from an Environmental Control System?

The need for an environmental control system depends on the degree of severity of a physical handicap rather than particular diagnosis. In general, anyone who is unable to operate a device in the normal manner may be a potential candidate for such a system. Typically, individuals who are severely handicapped due to one of the following conditions may be aided by a system:

- High Level Spinal Cord Injury
- Multiple Sclerosis
- Head Trauma
- Cerebral Palsy
- Amyotrophic Lateral Sclerosis
- Poliomyelitis

## Comparison of ECU Features

	AC Power Receptacles	Latching Control Receptacles	Momentary Control Receptacles	Standard Component
<b>ECU-1</b> 	4	2	6	Main Control Unit Input Display Bracket clamp, 19" gooseneck, 6" support rod
<b>ECU-2</b> 	4	1	3	Main Control Unit
<b>ECU-3</b> 	Wireless control of 8 BSR AC power modules, including lamp dimming	4	6	Main Control Unit Input Display Bracket clamp, 19" gooseneck 6" support rod 1 appliance module 1 lamp module Command Console

### DEFINITIONS

**AC Power Receptacle:** ECU receptacles providing switched 120 volt AC for the power of television, radio, stereo, lamp, etc.

**Latching Control\* Receptacle:** ECU receptacle that is turned on with one switch closure and turned off with a second switch closure. Used in conjunction with radio, call signal, nurse call, tape player, and battery powered items.

**Momentary Control\* Receptacle:** ECU receptacle that is only activated when control switch is activated. Used in conjunction with intercom, radio, bed control and television channel selector, for example.

\*Control Receptacles provide both a contact closure and switched 12 volts DC.

### STUDY

The June 1979 issue of the "Archives of Physical Medicine and Rehabilitation" includes a report of a formal 44 month clinical evaluation of 13 commercial electronic assistive devices; Environmental and Typewriter Control Systems for High-Level Quadriplegic Patients: Evaluation and Prescription. If a copy is not available for your reference, request a free reprint of the article from PRC. Conclusions as they appear are shown here.

### Conclusions

This 44-month study has yielded a volume of data regarding the suitability of various aspects of electronic assistive devices for use by individuals with high-level quadriplegia. Clinical evaluation of 13 devices by 52 traumatic C-2 to C-5, 6 level patients has revealed that the Prentke Romich ECU-1 and ADT-5A are acceptable for home use at present.

### Common features to all Environmental Control Systems

- Dimensions of main control unit: 17" W x 4" H x 11" D
- Adjustable scanning speed.
- **Control switch must be ordered separately.**
- Built-in telephone capabilities, requiring ADT-5C including operation during a power failure.
- Permit on/off operation of varying numbers of commercially available appliances and devices.
- Dependent upon 120 volt AC power. No special wiring required.
- Adjustable beep accompanies scanning steps.

### Resources

For additional information, the following resources are recommended:

#### Environmental Control Systems & Vocational Aids for Individuals with High-Level Quadriplegia.

Rehabilitation Monograph No. 55,  
Institute of Rehabilitation Medicine,  
New York University Medical Center,  
400 East 34th Street, New York, NY 10016.

**Manual on Management of the Quadriplegic Upper Limb**  
Harmarville Rehabilitation Center, Guys Run Road,  
Pittsburgh, PA 15238.

**Independence Through Environmental Control Systems**  
Symington, D.C., O'Shea, B.J., Batelaan, John and Wolf  
1980. Canadian Rehabilitation Council for the Disabled  
2110, One Yonge Street, Toronto, Canada M5E 1E5.

**How to Create Interiors for the Disabled**,  
Cary, Jane Randolph,  
Panethon Books, Random House, \$5.95.

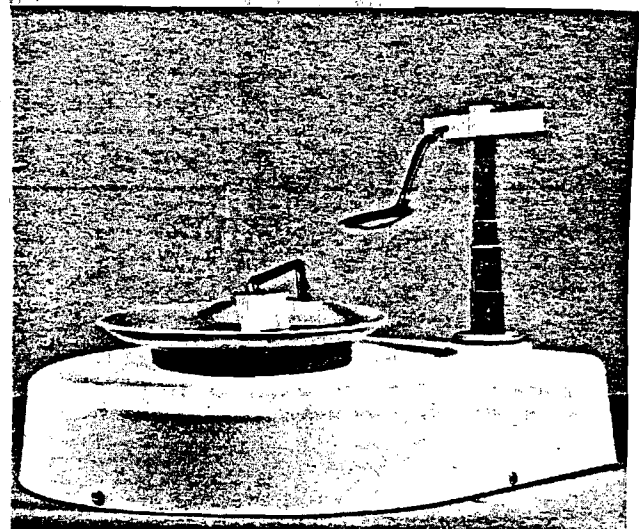
This unit was designed to permit independence in feeding. By operating a control switch, these functions are available to the severely handicapped user: plate rotation (for food selection), spoon in, out, up, down (to lift food from plate to mouth). The plate turntable can accommodate plates or bowls of various sizes and the spoon is standard flatware. Plate, spoon and spoon stop may be easily removed for washing.

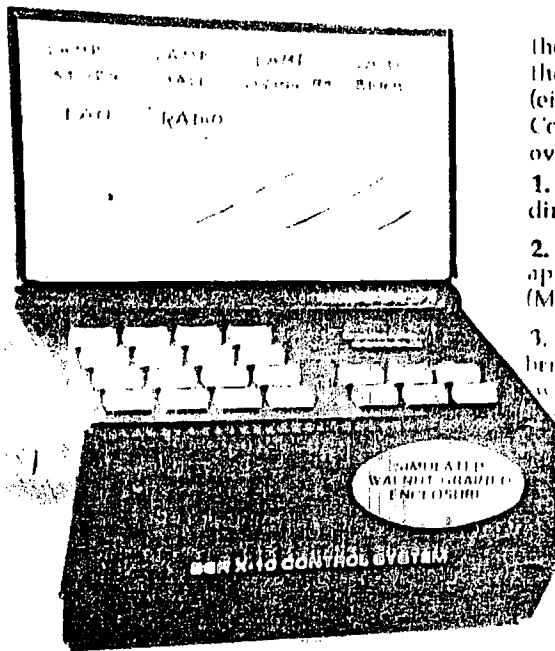
Control of the feeder is determined by the physical capabilities of the user. For the individual with spinal cord injury, or only limited physical movement available, the Interface is recommended. For someone with gross motor movements, for example, hand, arm, or foot, a separate activation for each spoon movement may be desired. In this case, the two control options are:

1. Arm Slot Control (ASC-5)
2. Joystick (JS-4) with a separate single or dual control switch.

By using the Interface (FFI-1) along with the Feeder and single control switch, the individual may activate the switch once to sequence through all of the spoon movements. The Interface and control switch (See General Catalog) must be ordered separately. Activating and maintaining the control switch will cause the plate to rotate. Releasing the switch will stop the rotation and initiate the spoon cycle to result in an elevated spoon with food ready to be eaten.

Currently under development is the Viewpoint Feeder Interface (VFI). This interface in conjunction with the Feeder and Viewpoint Optical Indicator permits operation of the feeder by slight head movement. The VOI, worn on the head, is directed toward the desired function on the VFI for control of the feeder. (See Expressive Communication Aids catalog).





The BSR X-10 Command Console allows remote control of the "on/off" functions of various electrical appliances, including the dim/bright feature of lights. By depressing the push button (either manually or with a mouthstick or headstick) on the Command Console Keyboard, command signals are transmitted over existing household wiring to the appropriate module.

1. **Wireless Lamp Dimmer Module** turns on/off and dims/brightens any incandescent lamp. (Maximum: 300 watts)
2. **Wireless Appliance Module** turns on/off various appliances, (e.g., TV, window fan, stereo, radio, etc.) (Maximum: 15 amperes)
3. **Wireless Wall Module** turns on/off as well as dims/brightens any incandescent lamp normally operated via a wall switch. (Maximum: 500 watt)

**Positive Features:**

- Simple operation
- Compact size
- Portable
- Relatively low cost
- Audio Visual Feedback

**Negative Features:**

- Limited function
- AC power control only

## FM Wireless Intercom

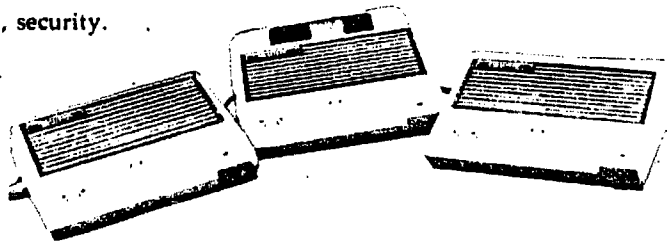
The FM Wireless Intercom is a standard consumer intercom that has been modified to be operated with a dual control switch. The system consists of a master station and two remote stations which are for able-bodied users. One side of the dual control switch selects the remote station channel. The other side switches the master station between TALK and LISTEN. Installation is particularly convenient as units need only be plugged into 120 volt AC power receptacles at the desired locations. Due to the AC power requirement, this system is not recommended for outside use.

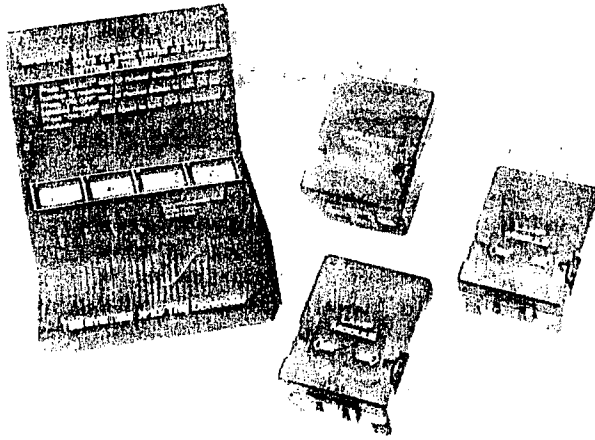
Can be used in 2 manners:

1. As an accessory to ECU (Dual Adapter Cable (AC-2) is required. Requires two momentary control receptacles on ECU main control unit.
2. As a separate unit. Dual control switch must be ordered separately.

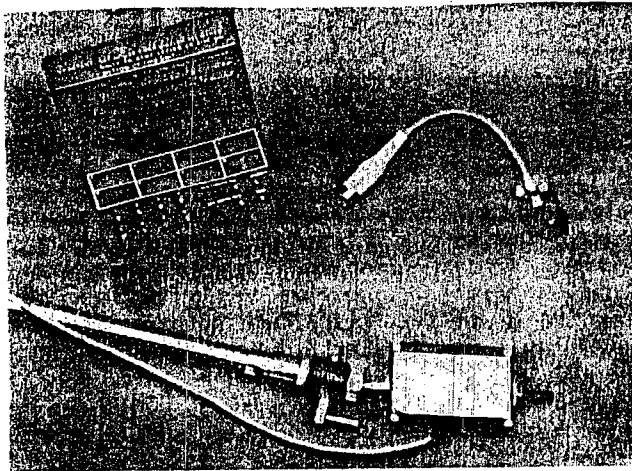
**Functional Goal:** Independence in communicating with 2 distant locations within a house.

**Justification:** General communication, safety, security.





**BSR-ECS-4** enables disabled individuals to operate the "on/off" functions only of up to four electrical devices. Shown with wireless modules.



**BSR-ECS-8** enables disabled individual to operate "on/off", all on, dim and bright features of lights and other electrical appliances. Shown are the BSR-ECS-8, BSRA-1 Adapter, Tongue Switch (TS-2).

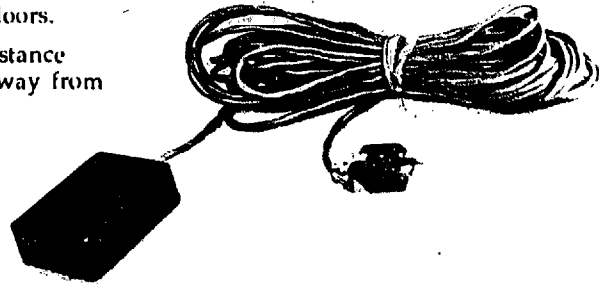
**To Order BSR-ECS-4 or BSR-ECS-8**, specify appropriate dual control switch, BSRA-1 Adapter, and quantity and type of wireless modules desired.

## Call Signal

This call system is useful in a home or other environment where call tone call must be a distance away from ECU. The call signal has a 25 foot cord that plugs directly into an ECU control receptacle. May be used indoors and outdoors.

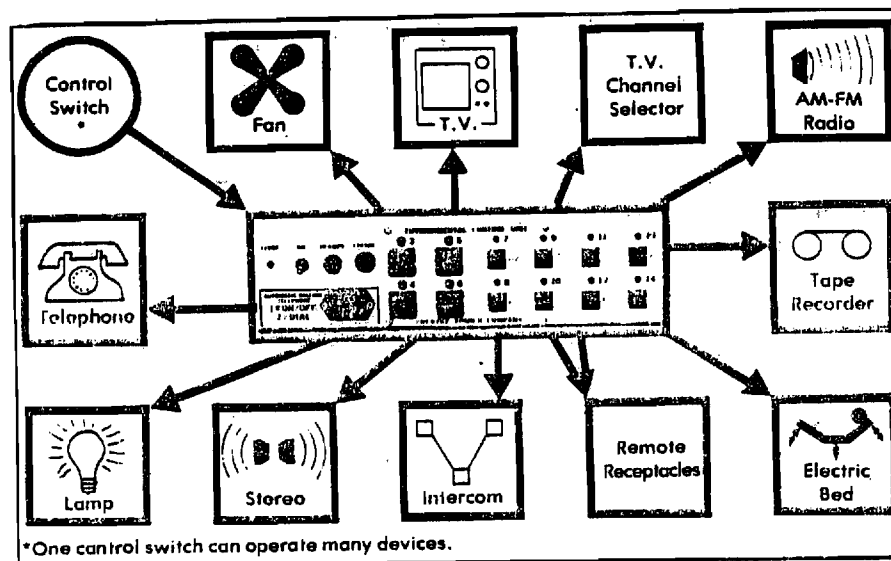
**Functional Goal:** Independent means to seek assistance from an individual who may be some distance away from the ECU user.

**Justification:** Safety.



## Remote Receptacle

This device permits on and off operation of electrical appliances located some distance from the ECU control box. The RR-2, a small box with a power cord and a 115 volt AC receptacle, has a twenty-five (25) foot low voltage cord which plugs into one of the momentary control receptacles on the ECU. Current capacity is 15 amperes. The Remote Receptacle is recommended as a safer alternative to extension cords. The Remote Receptacle is to be considered for high current loads, such as an air conditioner.



Environmental Control Unit

## Intercom

The Intercom System has been designed to be operated with a single control switch. The system consists of a master station, 2 remote stations for able-bodied persons and 100 feet of cable. Each remote station can be accessed independently. When a remote station has been turned on, the able-bodied remote station user can control the conversation.

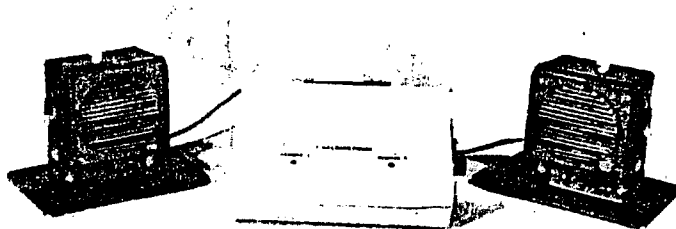
Can be used in two manners:

1. As an accessory to ECU (Single Adapter Cable (AC-1) is required).
2. As a separate unit. Single control switch must be ordered separately.

**Functional Goal:** Independence in communicating with 2 distant locations within a house, or from inside a house to an outside door.

**Justification:** General communication; safety, security.

**Note:** This Intercom insures greater privacy than the FMWI Intercom. It is more suited to outside use than the FMWI. Specify if one remote station is intended for outdoor use.



## Television Channel Selector

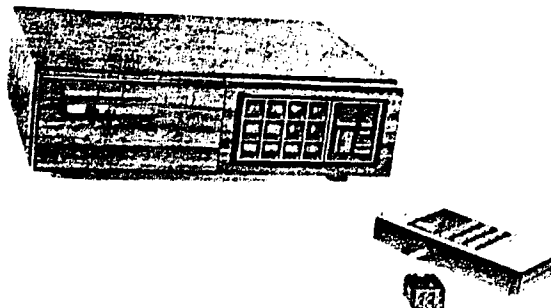
The Television Channel Selector attaches to most standard black and white or color televisions and permits the user to select any VHF or UHF station and to turn the TV on and off. Installation is comparable to connecting a television antenna to a television set.

Can be used in 2 manners:

1. As an accessory to ECU (Dual Adapter Cable (AC-2) must be ordered separately.) Requires 2 momentary control receptacles on ECU main control unit.
2. As a separate unit. Dual control switch must be ordered separately.

Simple test to determine whether a specific TV is suitable for use with TCS-2:

Tune in local station on channel 3 or 4, unplug TV, wait a few minutes, plug back in. TV should come on with same station tuned. Remote control televisions that fail this test may be controlled through an ECU following a PRC modification of the handheld transmitter. Contact PRC Director of Client Services regarding specific details.

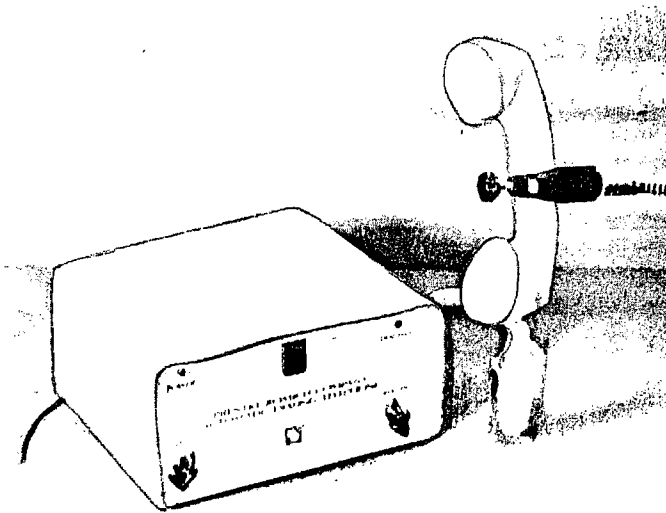


Television Channel Selector (TCS-2)

**Functional Goal:** Independence in on/off operation and channel selection of TV.

**Justification:** Vocational and educational purposes; independent pursuit of leisure time interests.





**Automatic Dialing Telephone (ADT-5C)**

The Automatic Dialing Telephone, an accessory that can be used with all three ECU models, permits the user to answer incoming calls independently and dial outgoing numbers, even in the event of a power failure. When used with the ECU-3, up to 10 telephone numbers including the last number dialed may be stored and automatically recalled from memory. The ADT-5C is provided with a handset mounted on a gooseneck with a bracket clamp. For private conversations this assembly can be positioned beside the user's head. A more convenient approach is to use the small condenser microphone and the internal speaker, providing speakerphone performance. The microphone may be mounted on the Pneumatic Switch or handset gooseneck or on the Tongue Switch box.

1. When used as an accessory with ECU, order Adapter Cable (AC-ADT).
2. As a separate unit, order any dual control switch.

**Functional Goal:**

Independence in all aspects of telephone management.

**Justification:**

- Safety (to summon assistance, call fire and/or police department).
- General communication (for personal, business and educational purposes).

**Standard Components:**

- Automatic Dialing Telephone (ADT-5C)
- Battery Charger (BCPS)
- Handset
- Gooseneck
- Microphone
- Telephone line connection cable and adapter

The ADT may be plugged into modular or 4-prong jacks.

## Bed Control

Most electric beds have detachable, hand-held or siderail controls which can be replaced by a PRC bed control. The BC-1 and BC-3 provide for the standard control to be connected for use by others (nursing, housekeeping, etc.)

Bed controls can be operated in 2 manners:

As a separate unit, with the use of an appropriate control switch and Dual Control Switch Power Adapter (DPSA).

As an accessory to any ECU.

**Functional Goal:** Independence in managing either 1, 2 or 3 functions of electric bed (e.g., head, foot, bed height).

**Benefit:** Improved respiratory status, pressure relief, overall body comfort and positioning.

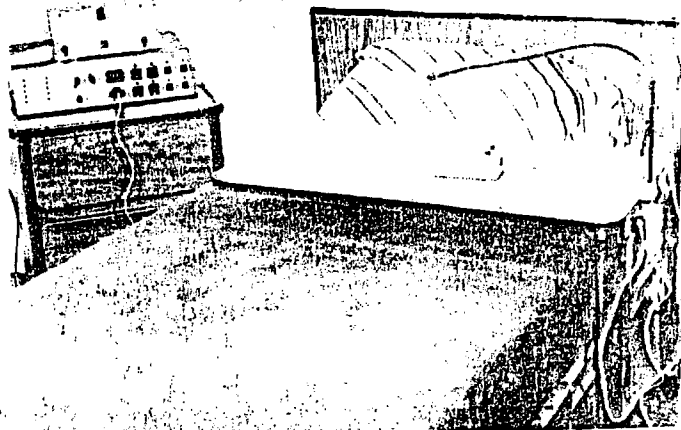
### ECU's 3 Standard Bed Controls:

**Bed Control (BC-1)** Independent operation of the electric bed functions, however, only in a fixed sequence, e.g., head up, head down, foot up, foot down, bed up, bed down. Requires 1 momentary control receptacle on ECU.

**Bed Control (BC-2)** Independent operation of any ONE electric bed function through use of a dual control switch (e.g., head up and down). Bed control BC-2 will only be provided for electric beds using a low voltage control to minimize electrical safety hazard.

**Bed Control (BC-3)** Independent operation of all the electric bed functions in a random fashion. Requires 3 momentary control receptacles on ECU.

To order a bed control, specify the manufacturer and model number of the electric bed.



Electric bed and ECU set up.

Photograph courtesy of Hard Manufacturing Company.

To order a bed control, specify the manufacturer and model number of the electric bed.

## Bed Controls

This chart indicates which PRC bed control is appropriate for several commonly used electric beds.

Electric Bed Manufacturer	Three Models of PRC Bed Controls		
	BC-1	BC-2	BC-3
Borg Warner	All Models	All Models	All Models
Craftmatic	All Models		All Models
Goodman	252, 352	252, 352	252, 352
Hard Manufacturing	Models 1694, 2000, 5088, 5188, 5289, 5389	Model 2000	Models 1694, 2000, 5088, 5188, 5289, 5389
Hill-Rom	Models 715, 720, 815, 820, 840	Models 715, 720, 815, 820, 840	Models 715, 720, 815, 820, 840
Interoyal	Fred Bed*		Fred Bed*
Smith-Davis	Models 2676, 2680		Models 2676, 2680
Thompson Blair	Model 82, 83		Model 82, 83

\*Fred Bed requires modification of standard BC-1, BC-3. Please contact us for quotation.

Sosten. Remote trigger can dial telephone, each up to five times, and deliver pre-recorded help messages. Also can be scheduled for up to 5 message reminders.

Sold by: S.L. Communications  
80 West 2100 South  
Salt Lake City Utah 84115



## TASH Products.

(See above)

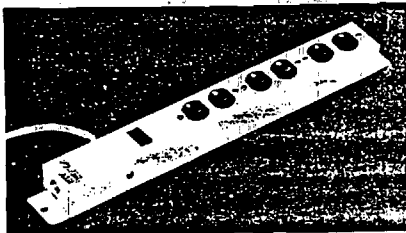
### **Power Strip**

4330

A prewired strip of 6 AC power outlets which allows up to 6 appliances to be powered from a single wall outlet. Safer and more convenient than running multiple extension cords. Protective push-to-reset circuit breaker. An indicator light lets you know when the built-in On/Off switch is in the On position. Has 6 ft. cord and 3 prong grounded plug. Rated at 15 A at 115V AC. CSA Approved.

#### **SPECIFICATIONS:**

Size: 18" x 2 1/4" x 2". Weight: 3 lbs.



### **Extension Cables**

Many types are available in various lengths to extend the cables of ABILITY Switches, microphones or telephones. A few popular types and sizes are shown below. Please contact us for your requirements.

Description	Length	Order #
Dual ABILITY Switch Cables	6'	4335
	12'	4336
Microphone Cables	6'	4322
	12'	4323
Telephone Modular Cables	6'	4345
	12'	4346
2-Prong Adaptor Telephone Plug for use with Modular Jack.		4326

### **AC Adapter**

4328

#### **Used to operate:**

2100 TELCD Automatic Dialing Telephone

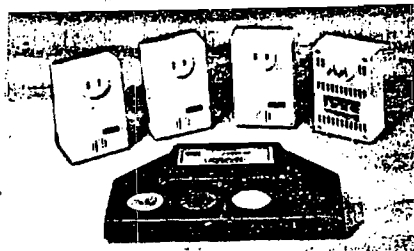
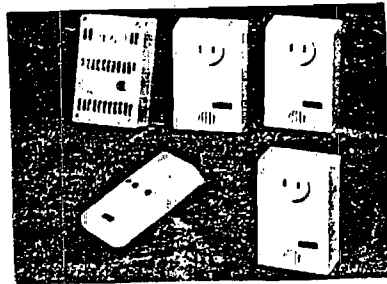
2600 COM-BOARD

6400 Relay Power Unit

or other technical aids requiring 12V DC power. Not suitable for operation of ROTD TABLE Motor Drive Unit. Adapter has quick change plug and jack to correct polarity. TASH Equipment requires centre pin to be positive. Rated at 400-mA. CSA Approved.

#### **SPECIFICATIONS:**

Size: 2" x 2 1/4" x 2". Weight: 1 lb.



### Enco-5 System

4130

4125

Allows the user to switch on or off, up to five electrical appliances. May be operated with any Single or Dual ABILITY Switch.

Items controlled may include a radio, TV, lights, cassette recorder, fan or other 115V AC appliances. These items are plugged into the back panel outlets of the ENCO-5 Unit. Adjustable audio and visual feedback allows for operation by those with hearing or visual impairments.

A terminal strip on the back panel allows for connection of up to 4 low voltage items, up to 30V DC such as:

- Call Alert or Nurse Call
- Electric Bed with optional #6400 Power Relay Unit
- Page Turner
- Power Source 12V DC and 22V DC, 500 mA max.

A TELCO Automatic Dialing Telephone may be connected to the ENCO-5 Unit when used in conjunction with a Dual ABILITY Switch.

Appliances with a total power rating up to 1600 watts can be operated through the ENCO-5 Unit. Powered by 115V AC. CSA Approved.

#### SPECIFICATIONS:

Size: 13" x 8" x 4 1/2" Weight: 11 lbs.

Adapted from a design by the Biomedical Engineering Unit at Queens University, Kingston, Ontario.

### Ultra-4 System

Allows the user to remotely turn on or off, up to four electrical appliances within one room.

Two battery-operated transmitters are available. The small, hand-held transmitter is intended for use by those who have usual hand and finger control. The larger transmitter is intended for use by those with limited hand and finger dexterity. Transmitter may also be operated with a mouth stick. The 1 1/2" buttons require only 150 grams force to operate. Suitable for gooseneck mounting on a bedrail or headboard.

A 1 1/2 volt AA battery powers each transmitter and should provide a full year of service.

The four coloured buttons on the transmitters correspond to the four colour-coded receivers. Receivers are plugged into electrical outlets.

Lamps, televisions, radios or other appliances rated to up 500 watts are switched on and plugged into the receiver. When the user presses any of the coloured buttons on the transmitter the corresponding colour coded receiver turns the appliance on or off.

Additional receivers may be used to operate appliances in other rooms using the same transmitter. CSA and UL Approved.

Description	Order #
ULTRA-4 System consisting of one Small Transmitter and 4 Receivers	4130
ULTRA-4 System consisting of one Large Transmitter and 4 Receivers	4135
Additional ULTRA-4 Receiver	4141
Small ULTRA-4 Transmitter	4140
Large ULTRA-4 Transmitter	4145

#### SPECIFICATIONS:

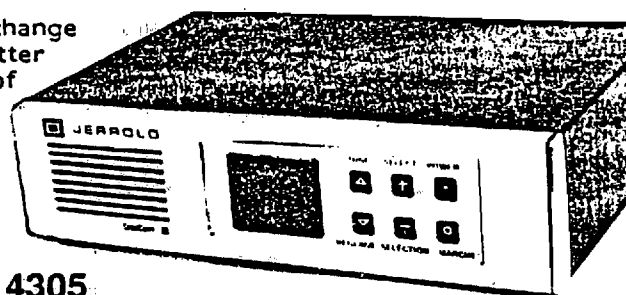
	Size	Weight
Small Transmitter	4" x 2 1/2" x 1"	1/2 lb.
Large Transmitter	8 1/2" x 5" x 1 1/2"	1 lb.
Receivers	2 1/2" x 4 1/2" x 1 1/2"	1/2 lb.

## Tosc-2 TV Channel Selector 4303

Required for channel selection when operating a television set through a TOSC-2 System. Connects directly to any colour or black and white television set. May be used with cable or outside TV antennae. Will turn television on or off and change up to 100 channels. Remote hand held transmitter supplied and allows for independent operation of television set. Powered by 115V AC. CSA Approved.

### SPECIFICATIONS:

Size: 10½" x 6½" x 3" Weight: 4½ lbs.

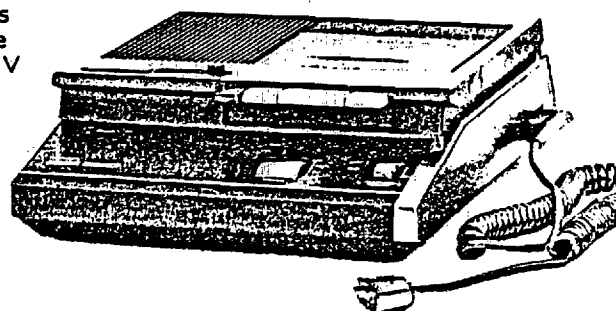


## Tosc-2 Tape Recorder 4305

Compact, low profile design. Has many features for recording and playing back conversations, radio programs, telephone conversations, or playing prerecorded tapes and music through the TOSC-2 System. Uses standard cassettes up to 120 minutes in length. A #4321 Tape Recorder 3 ft. Cable is required and supplied when connecting the tape recorder to a TOSC-2 System. Powered by 115V AC. CSA Approved.

### SPECIFICATIONS:

Size: 9½" x 12" x 3½" Weight: 9½ lbs.



## Pillow Speakers

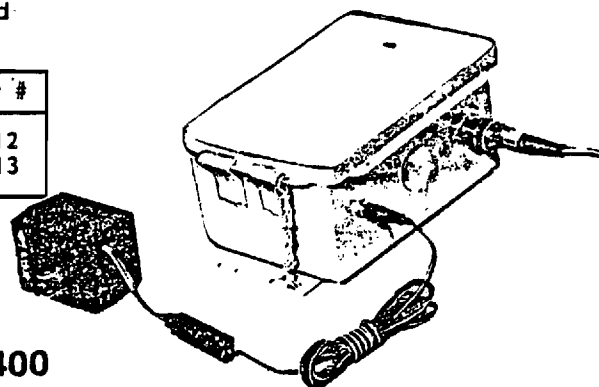
An alternative to using the TOSC-2 System Speaker or TELCO Automatic Dialing Telephone built in Speaker. Allows for more private listening and telephone conversations.

Description	Order #
Pillow Speaker without Volume Control	4312
Pillow Speaker with Volume Control	4313

### SPECIFICATIONS:

Cable length: 5'

Size: 3½" x 3" x 1" Weight: ½ lbs.



## Power Relay Unit 6400

Allows user to operate an electric bed, door opener, drape puller or other 115V AC equipment. Operated with any Single or Dual ABILITY Switch.

May be connected to TOSC-2 or ENCO-5 Environmental Control System to operate an electric bed, door opener or drape puller or other 115V AC equipment. Powered by an AC Adapter provided. Relay contact ratings are:

13A	at	120 VAC resistive
7.5A	at	120 VAC inductive
1/3 HP Motor	at	120 VAC

### SPECIFICATIONS:

Size: 7" x 4½" x 3½" Weight: 4 lbs.

## Beeper Box 4500

Allows user to attract attention by using a single ABILITY Switch. Touch sensitive electronic switches cannot be used. When activated either one or several beeps are produced. Can be set for high or low tones. Powered by 9V battery.

### SPECIFICATIONS:

Size: 5-3/5" x 3½" x 1½" Weight: ½ lb.

## AM/FM Radio with Tuning Motor 4301

Consists of #4302 AM/FM Radio and #4309 Radio Tuning Motor. Tuning dial knob of radio is grooved to accept "O" ring drive. May be operated through TOSC-2 or ENCO-5 Systems.

### SPECIFICATIONS:

Size: 8½" x 11" x 4" Weight: 4 lbs.

## AM/FM Radio 4302

A compact radio that may be used with any Environmental Control System. Has earphone jack for connection to TOSC-2 System. Delivers a full range of sound. Lighted tuning dial, tone control, built-in antennae, terminals for external FM antennae. Pressed-wood cabinet with walnut vinyl veneer. May be used with #4309 Radio Tuning Motor. Powered by 115V AC. CSA Approved.

### SPECIFICATIONS:

Size: 6" x 11" x 4" Weight: 3 lbs.

## Radio Tuning Motor 4309

Designed to turn tuning or volume control knobs on a radio in two directions at low speed. Dark brown metal case. Mounted to appliance with adhesive tape supplied. "O" ring or length of "O" ring material to operate appliance is supplied. Powered by 12V DC, available from the TOSC-2 System Distribution Panel or optional #4328 AC Adapter.

### SPECIFICATIONS:

Size: 4½" x 3-3/4" x 2½" Weight: 1 lb.

## Telephone Digital Readout 4307

Provides visual readout of telephone number digits when dialing a number using a TOSC-2 System. Plugs into and is powered by the TOSC-2 Main Unit.

### SPECIFICATIONS:

Cable length: 6'

Size: 4½" DIA x 4½" H Weight: 1 lb.

## Distribution Panel 4110

The distribution panel is supplied with the TOSC-2 System and allows for easy installation and connection of the following:

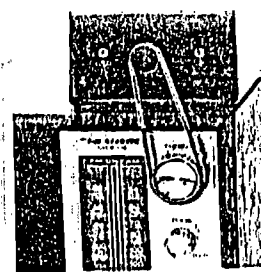
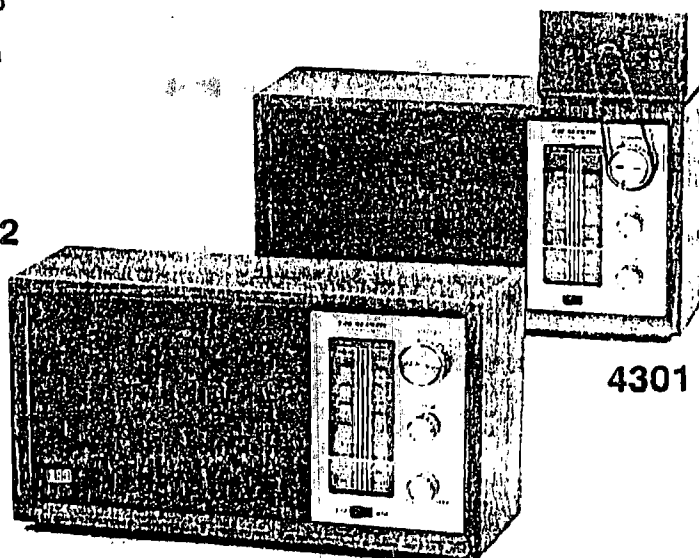
- Additional ABILITY Switches
  - Intercom Speaker
  - Call Alert
  - Nurse Call
  - Electric Door Lock
  - Telephone line
  - Radio Tuning Motor
  - Remote Audio feedback
  - 3 low voltage items - up to 30V DC such as:
    - Electric Bed with optional #6400 Power Relay Unit
    - Page Turner
    - ENCO-5 Environmental Control System for operating 5 additional appliances
- Power source 12V DC, 500 mA max.

### SPECIFICATIONS:

Cable length: 6'

Size: 8" x 6" x 2"

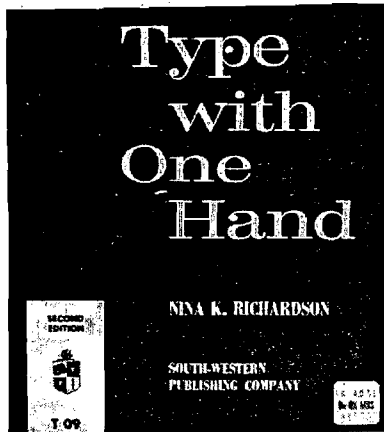
Weight: 4 lbs.



Type with One Hand.

Reference book. Publisher reports individuals 30 words per minute. User proceeds to regular typing book.

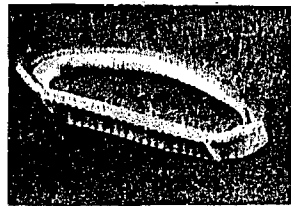
Sold by: Fred Sammons (see above)



Universal Cuff.

Traditional leather ADL cuff. Elastic strap. Holds utensils as well as right angle pocket. Small, medium and large sizes.

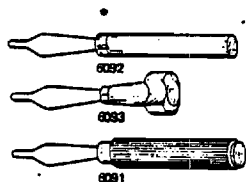
Sold by: Fred Sammons (see above)



## PERSONAL CARE

### Dressing -

Nelson Medical Products. Order from: 5690 Sarah Avenue  
Sarasota FL 33583-9510  
813-924-2058



**BUTTON AIDS.** Wooden Handles with shaped wire loops for aid in buttoning coat, etc. Pass loop through buttonhole and over button, then pull button through hole.

\*6091 8" long 7/8" dia. \$2.28  
\*6092 6" long 1/2" dia. \$2.48  
\*6093 Knob Handle \$2.88



**ELASTIC SHOE LACES.** Permits shoes to be slipped on or off without tying or untying.

\*6282 White, Pair \$1.50  
\*6282 Black, Pair \$1.50  
\*6282 Brown, Pair \$1.50

**VELCRO fastener...**  
PROVIDES COMPLETE ADJUSTABILITY



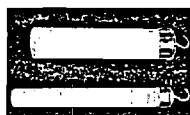
The **PRESS-TO-CLOSE, WASHABLE FASTENER** for clothing, accessories. Includes both hook and loop.

\*6118A White 3/4" wide \$ .30 R.  
\*6118B Beige 3/4" wide \$ .30 R.  
\*6325A White 1" wide \$1.10 R.  
\*6325B Beige 1" wide \$1.10 R.



**FOOT-SHOE INSERTION AID.** Is a plastic device to slip over the shoe counter before inserting the foot. Allows the foot to slip into the shoe without shoe horn or bending the counter. Aid slips out easily after the foot is in place.

\*6261 \$2.80



**LARGE HANDLE ZIPPER PULL.** For those who have difficulty in holding onto zipper tabs. Wooden shaft, C-hook.

\*6072 Wood handle 1/2" dia. \$1.75

**LARGE HANDLE ZIPPER PULL.** As above, but with large rubber covered handle.

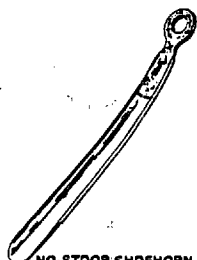
\*6073 Rubber handle 1" dia. \$2.50



**LONG REACH ZIPPER PULL.**

This 18" plastic cord with metal hook and ring eliminates struggling with hard to reach zippers.

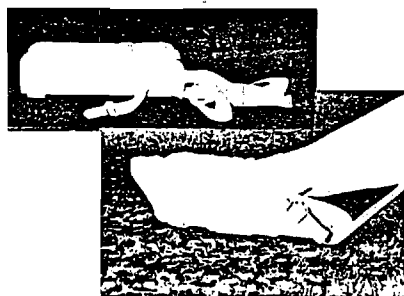
\*6286 \$1.90



**NO-STOOP SHOE HORN.**

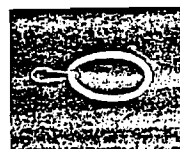
Helpful to the handicapped or convalescent and those who find it hard to stoop.

\*6061 18" long \$2.20



**STOCKING AID.** Enables a person with little or no movement in legs or hips to easily put on socks or stockings.

\*6306 \$12.00



**ZIPPER PULL RING.** For those unable to pull regular zipper tabs. This 1" ring with snap, hooks into regular tab, making zipping and unzipping easier.

\*5071 \$ .50

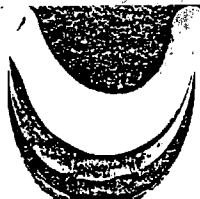


Fred Sammons. Order from: Box 32  
 Brookfield IL 60513  
 800-323-7305



**CUFF AND COLLAR  
 BUTTON EXTENDER**  
 No need to button or unbutton  
 shirt cuffs when wearing this.  
 Most hands slip through easily.  
 Collars are increased by 1  
 size. Extender is constructed  
 of durable rustproof spring  
 steel.

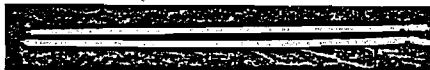
BK-2136 Cuff and Collar  
 Button Extender,  
 Pkg. of 1



**INSERT-A-FOOT™ SHOE AID**

This is a smooth plastic device that is slipped over the shoe counter before inserting the foot. The Insert-A-Foot™ allows the foot to slip into the shoe without a shoe horn and without bending the counter. Slips out easily after the foot is in place.

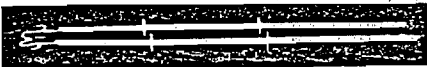
BK-2071 Insert-A-Foot™ Shoe Aid



**TOTAL HIP SOCK AID**

An economical way for hip surgery patients to get their socks or stockings on. Normal hand function permits fastening the garter clips and manipulating the socks. Garters are positioned so they release by a simple downward push. Plastic cover over strong wood shaft, 5/8" in diameter, 36" in length. Supplied as a pair. Suggested by a Minnesota therapist.

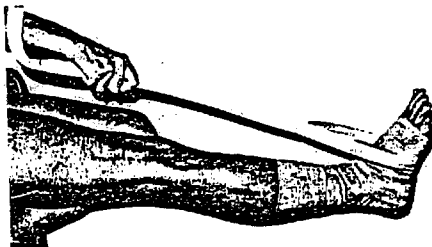
BK-2142 Total Hip Sock Aid, Pair



**DELUXE TOTAL HIP SOCK AID**

Similar to the BK-2142 but with extra features. The circular hand guards provide grip. The plastic-covered end hook has a combination push-pull design for better function. 38 1/2" in length. Supplied as a pair.

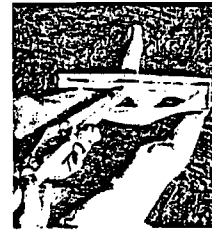
BK-2146 Deluxe Total Hip Sock Aid, Pair



**LEG LIFTER**

A reinforced webbing loop with an aluminum insert extends your reach 28" to assist in lifting one leg at a time on or off the bed or wheelchair. The loop is simply placed around the cast or foot with the leg in the extended position. Useful to persons in leg casts or those who have had procedures where adduction or quadriceps contraction is contra-indicated.

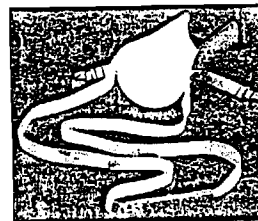
BK-6132 Leg Lifter



**R.O.M.™ DRESSING AID**

A long-handled dressing device for individuals with limited range of motion in the lower extremities. Lightweight plastic is easy to handle yet very durable. Supplied as a kit; therefore you must measure the individual's clothing and cut the lateral plastic pieces to the correct length. You will then insert them into the main frame and lock them in place with the screws. The main handle can be shortened to the best length. Works well with ladies' or men's garments. Suggested by a Michigan hospital.

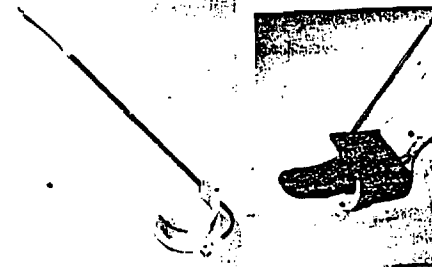
BK-2107 R.O.M.™ Dressing Aid



**FLEXIBLE SOCK AND STOCKING AID**

A sock or stocking is drawn over the flexible plastic core. The foot is inserted into the opening and continued pulling brings the sock over the heel and up onto the calf. Two clips fasten to hose to bring it into reach. Not recommended for one-handed individuals. Suggested by a Pennsylvania rehab center.

BK-2086 Flexible Sock and Stocking Aid



**DELUXE SOCK AND STOCKING AID**

Sock or stocking is pulled over the rigid plastic core. Insert foot into the opening and pull up on the metal shaft to bring the sock onto the foot, over the heel and up the leg. Sock is removed by inserting the top of the sock into the slot in the shoehorn end of the shaft and pushing sock down and off. Not recommended for one-handed persons.

BK-2088 Deluxe Sock and Stocking Aid



#### QUAD-QUIP™ SOCK AID MITTS

Special mitts to assist a quadriplegic individual in putting on loose-fitting woolly socks. The rubber-laced material grips the sock and draws it over the foot. Velcro® adjustment at fingers and wrist. Suggested by a Massachusetts rehabilitation unit.

BK-2083 Quad-Quip™ Sock Aid Mitt, Pair



#### QUAD-QUIP™ BUTTONER-ZIPPER PULL

A combination hook and zipper pull in one unit. Bendable metal cuff with plastic coating contours to fit the hand. Stainless steel loops. Suggested by an Arkansas rehabilitation center.

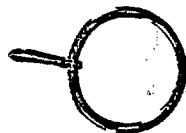
BK-2078 Quad-Quip™ Buttoner-Zipper Pull



#### QUAD-QUIP™ TROUSER PULL

An aid to assist a quad or limited range-of-motion individual in putting on his trousers. A plastic hook is slipped into the side belt loops, the hands are slipped through the webbing loops and the trousers are placed over the feet. By pulling and rolling from side to side, it is possible to pull the trousers up. The webbing loops stay in a round position so the arm is easily slipped from one loop to the next. Suggested by a Massachusetts rehabilitation unit.

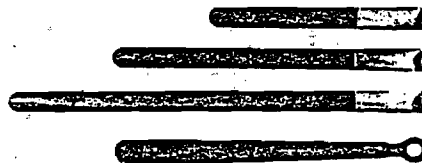
BK-2100 Quad-Quip™ Trousers Pull, Pair



#### RING ZIPPER PULL

For those who are unable to pull regular zipper tabs. This 1" ring with snap hooks into regular tab and makes zipping and unzipping easier. THREE per package.

BK-2138 Ring Zipper Pull, Pkg. of 3



#### SHOE HORNS

Three lifetime stainless steel shoe horns and an economy plastic model to choose from. Stainless steel models have a plastisol covering at the hand grip and a curved hook for pulling up socks and garments.

BK-2063 Shoe Horn, 12", Stainless Steel

BK-2061 Shoe Horn, 18", Stainless Steel

BK-2064 Shoe Horn, 24", Stainless Steel

BK-2065 Shoe Horn, 18", Plastic

## Eating, Drinking -

### Bilateral Glass Holder..

Steel handled glass holder with plastic coating. Clamp at top adjusts to fit any glass.



Order from: Fred Sammons  
(see above)

### Built-Up Handle Utensils:

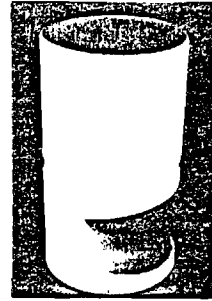
Plastic core and foam padding. Will not absorb moisture. Stainless steel utensils.

Order from: Fred Sammons (see above)



Pedestal Cup. Melaware. Holds 8 oz. Allows person to slip slip thumb and index finger under cup when finger grasp is weak or absent.

Order from: Fred Sammons  
(see above)



Sip'N'Straw Glass with Lid.

Covered, boilable plastic glass with drinking slots on either side, punchout for straw. Unbreakable. Lids also sold in packages of 10.

Order from: Fred Sammons  
(see above)

Teapot/Kettle Pourer Stand. Wooden. Allows tea to be poured without lifting heavy kettle or pot.

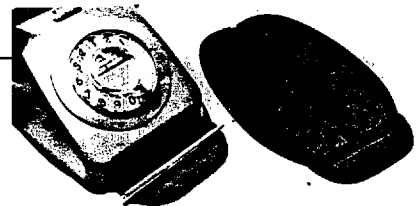
Sold by: Hugh Steeper  
(Roehampton Ltd.)  
237-239 Roehampton Lane  
London SW15 4LB  
England  
Phone: 01-788-8165



Miscellaneous -

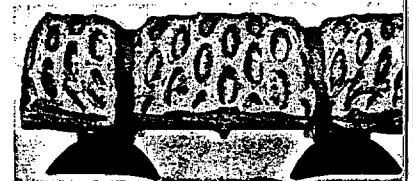
Dycem Telephone Pad. In red, blue and green.

Order from: Hugh Steeper  
(see above)



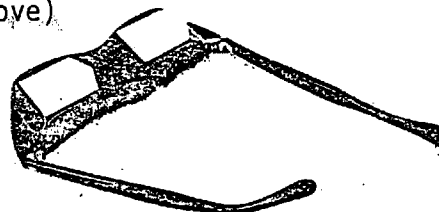
Hand Sponge. Cellulose with special texture. Plastic base. Two suction cups. Washes all parts of the hand.

Order from: Fred Sammons (see above)



Prism Glasses. Angles vision for reading or watching TV while lying in bed. Shows half page instead of 2-to-3 lines. Can be worn with corrective glasses.

Order from: Fred Sammons (see above)

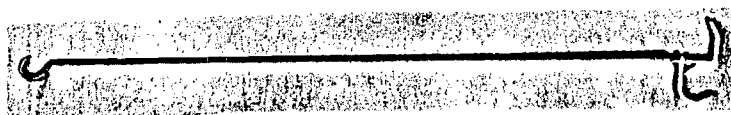


Reclining Viewer. For reading or watching TV. Will fit over glasses. Mirror reflects the light, can be easily cleaned with soap and water.

Order from: Fred Sammons (see above)

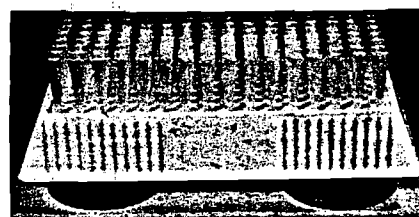
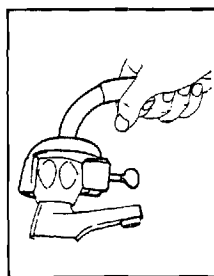
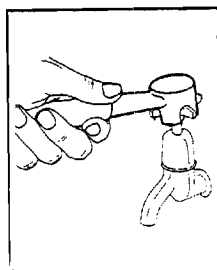
Reacher and Dressing Stick. Economy model. Plastic coated push-pull hook on end end, small C hook on the other. Wood shaft. 27" long.

Order from: Fred Sammons (see above)



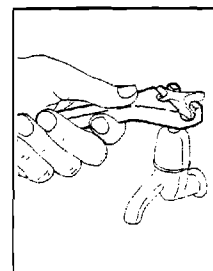
Suction Brush. Nylon bristles in durable plastic. Two suction cups.

Order from: Fred Sammons (see above)



Tap Turners. Three models as shown. Bottom model has braille coding, is all plastic. Top two are plastic handled, steel turners.

Order from: Hugh Steeper (see above)



TRANSFER

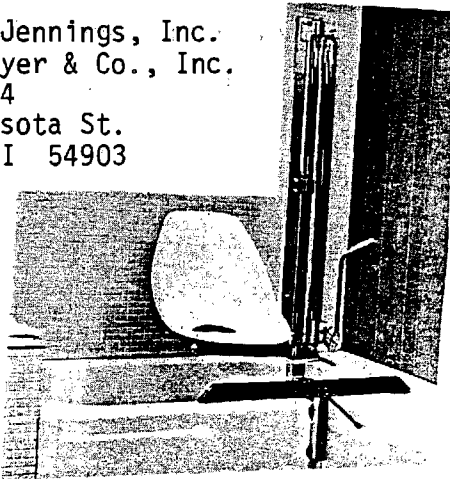
Bath Lift. Operates on water pressure only. Seat lowers to 3" in tub. Easy to install; portable. Carries up to 200 lbs. Fiberglass seat; aluminum cylinder.

Sold by: FashionAble  
PO Box "S"  
Rocky Hill NJ 08553  
609-921-2563



Bath Lift. Hydraulic. Safety stop. Seat lock. Plastic seat; chrome mechanism. Maximum capacity 250 lbs. Cannot be used on rolled rimmed tubs, fiberglass tubs, or tubs over 18" high.

Sold by: Everest & Jennings, Inc.  
c/o Ted Hoyer & Co., Inc.  
PO Box 2744  
2222 Minnesota St.  
Oshkosh WI 54903

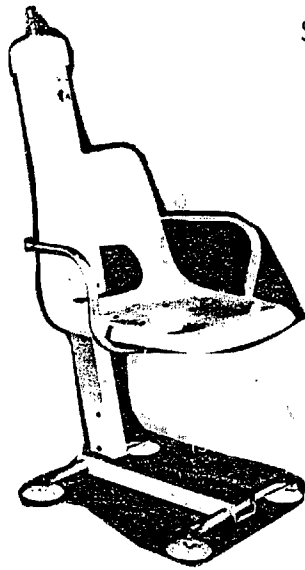


Clamp-On Bath Lift. Gray enamel or chrome finish. In models for tubs to 18" high or 30" high. Cannot be used on fiberglass tubs.

Sold by: Everest & Jennings, Inc. (see above)

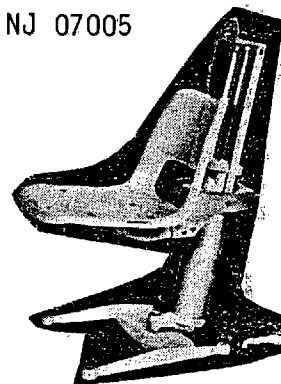
Nolan Bath Chair Lift. Self-operated. Portable. Lifts, lowers, turns.

Sold by: J.E. Nolan & Co., Inc.  
PO Box 43201  
Louisville KY 40243  
502-425-0883



Portable Bath Lift. Water powered. Fits all tubs.

Sold by: Chec Portable Bath Lift, Inc.  
PO Box 5  
Boonloun NJ 07005

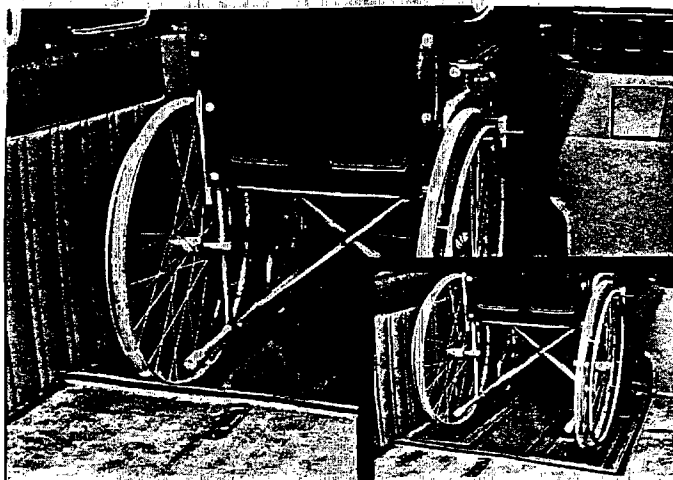


## Van Modifications

### Braun Corporation Products -



*Overhead Transfer Bar* aids handicapped person in transferring.



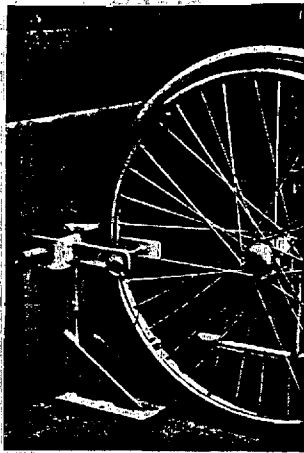
Custom Designed *Power Channels* automatically lower the wheelchair occupant to a comfortable height for better visibility. Also available are driving channels which the wheelchair rolls into for favorable visibility.



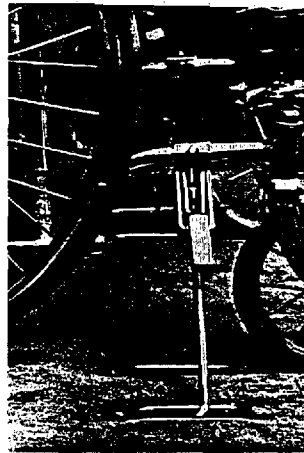
Durable Constructed *Power Pan* moves the wheelchair vertically via a mini-elevator. No transfer is necessary. No horizontal movement. (Individual wheel cups can also be installed in a variety of floor locations for permanent positioning of wheelchair while in transit.)



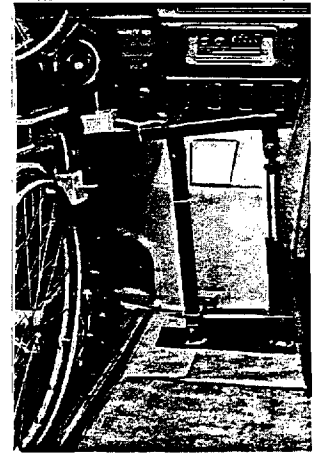
*Cam Lock* is universally positionable for anchoring of most any wheelchair.



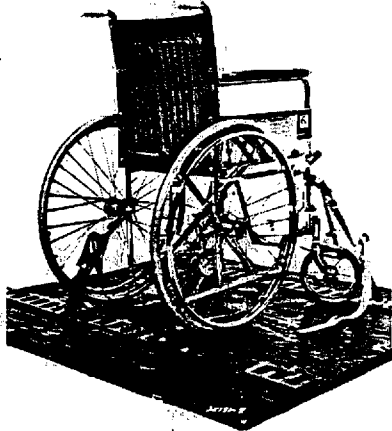
*Rear Wheel Tie Down* is available in either a manual or automatic model. Fastens wheelchair safely to the wall.



*Over the Center Tie Down* locks both sides of the wheelchair securely to the floor.



*Automatic Electric Tie Down* increases driving stability and protects against rolling and tipping.



*Track Tie Downs* offer the greatest degree of positive securement and adapts to practically all motorized and manual wheelchairs. Ideal for mass-transit travel due to the track versatility.



*Detachable Bench Seat* allows for removal of unnecessary able-bodied seating.



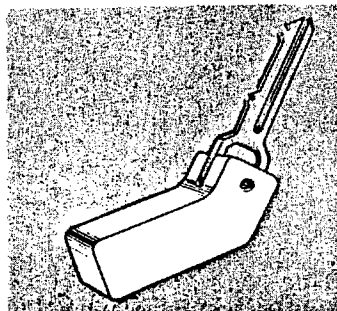
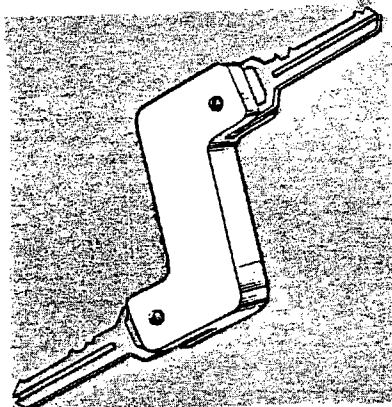
*Detachable Pedestal Seat* enables wheelchair to occupy drivers seating position. Detachable seat stores in rear of vehicle.

Address: 13710 49th St. North  
Clearwater FL 33520  
813-576-2737

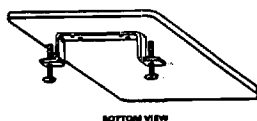


Gresham Driving Aids - Holders for ignition and/or ignition and door keys.

Address: PO Box 405A  
30800 Wixom Road  
Wixom MI 48096

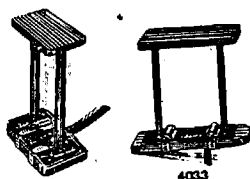


Nelson Medical Products - 5690 Sarah Avenue  
Sarasota FL 33583-9510  
813-924-2058

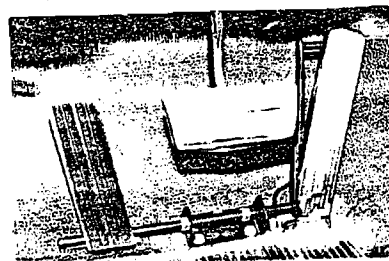


**AUTO FLOORWELL BOARD.** When this device is used in the floorwell behind the front seat, it prevents wheelchair from dropping into well. No more struggling necessary to get wheelchair in or out of car. Requires no cutting or fitting; completely adjustable for height. Easily taken from one car to another. Made of plywood and steel.

4038 \$16.00



**BUILT-UP BRAKE & GAS PEDAL.** For those with short legs. Adjust from 1"-8" high by cutting off height tubes. Easily cut with hacksaw.  
4032 Brake Pedal \$17.50  
4033 Gas Pedal \$15.00



**LEFT-FOOT ACCELERATOR.** Attaches to floor with self tapping screws. Adjustable for proper mounting on all makes of cars. When not in use, may be completely detached from existing accelerator and folded forward against floor.  
4007 Black enamel finish \$32.00

NOTE: Auto dealers wishing to install mechanical controls can order these from Wells-Engberg Co, Inc.  
PO Box 6388  
Rockford IL 61125  
815-397-6208

(same price list enclosed)

# NEW PRICES IN EFFECT JUNE 1, 1983

## COMPLETE SETS

<u>Quantities</u>	<u>List</u>	<u>Unit Price</u>	<u>Total Net</u>
(1)	252.00	180.00	180.00
(2)	504.00	168.00	336.00
(3)	756.00	156.00	468.00
(6)	1512.00	156.00	936.00
(10)	2520.00	144.00	1440.00

## BRAKE AND ACCELERATOR

(1)	228.00	162.75	162.75
(2)	456.00	151.90	303.80
(3)	684.00	141.05	423.15
(6)	1368.00	141.05	846.30

Add \$3.50 for each control ordered for shipping and handling.  
3 or more controls ordered will be shipped prepaid

20% Discounts on all others for all quantities:

Left-foot gas feed	List \$56.00	Discount \$44.80
Parking Brake handle	45.00	36.00
Spinner Knob	44.00	35.20

Add \$1.75 for shipping and handling for each driving aid.  
Any combination of 3 driving aids will be shipped prepaid.

REVISED PARTS PRICE LIST EFFECTIVE JUNE 1, 1983

Part No.

91	Brake tube assembly -----	\$16.41
BCA	Brake channel assembly-----	24.10
111	Channels with nuts & bolts-----	10.09
1256	"U" bolt with washer & nuts-----	3.78
93	Ball-joint lower -----	8.71
121	Threaded rod and nuts -----	1.52
ATA	Accelerator tube assembly -----	18.17
92	Accelerator tube -----	13.35
SR-107	Ball-joint, upper -----	4.82
ACS	Accelerator slotted clamp assembly -----	10.57
112	Clamp, screws & nuts -----	6.78
DS-106	Ball-joint -----	2.27
122	Threaded rod & nuts -----	1.52
TPS	GM & TPS Mounting assembly -----	53.52
103	Pivot arm -----	20.88
117	Pivot arm channel w/bolt, nut,----- washer	11.37
116	Upper "V" Bracket -----	4.82
116	Lower "V" Bracket -----	4.82
23	Aero-Seal worm clamps (pair) -----	6.18
17	Threaded studs, nuts & washers ----	1.88
84	Pivot screw, nylon washers, nut----	3.57
LBA	Leverage bar assembly -----	9.45
66	Leverage bar & screw -----	8.22
118	Rubber tip only -----	1.23
119	Black vinyl hand grip -----	2.91
12	Dimmer switch harness -----	20.20
MA	Main arm w/twist grip assemb & link -----	99.39
76	Main arm only-----	63.81
127	Twist grip only-----	27.34
15	Link with pin -----	8.24
128	Shield, right hand -----	10.31
129	Shield, left hand -----	10.31

Wells-Engberg Company, Inc.  
P.O. Box 6388  
Rockford, Illinois 61125  
Phone - 815-397-6208

June 1983 prices:

Parking brake handle	\$45.00
Spinner Knobs	44.00
LF Gas pedals	56.00
LH Gear shift lever	34.00

Special Mountings:

Ford plate mounting	9.00
Omni & Horizon Mtg.	33.00
Ford Escort & Mercury Lynx Mtg.	17.00
Toyota Mtg. Bracket	17.00
GM mounting assy.	53.52
Ford EXP - 1983	18.00

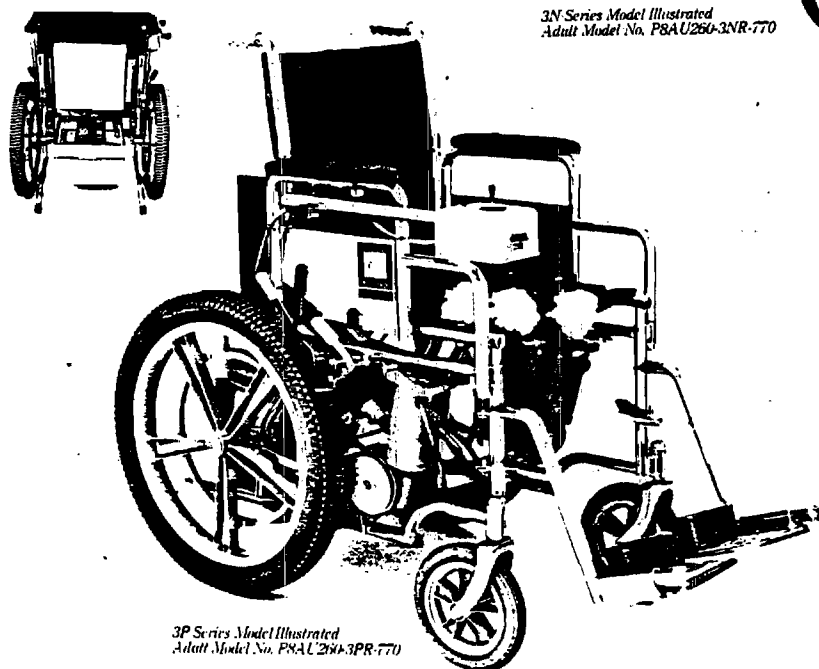
	<u>OEM prices 10 or more per year</u>	<u>Wholesale Prices</u>	<u>Retail Prices</u>
Standard control	1375.00	1575.00	2535.00
Push-Pull control	1375.00	1575.00	2535.00
<hr/>			
Control box-push-pull for Dealers who wish to demonstrate both	427.39	512.86	615.44
Foot Pedal Control	1975.00	2175.00	2895.00

## WHEELCHAIRS

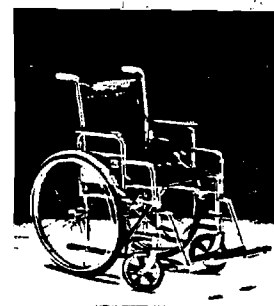
Everest & Jennings. Fixed and reclining back models, children's and adult sizes. Posture 90, 3N Series lightweight office chair, and 3P outdoor chair models. See below.



3N Series Model Illustrated  
Adult Model No. P8AU260-3NR-770



3P Series Model Illustrated  
Adult Model No. P8AU294-3PR-770



**A.D.L. Tall**  
A.D.L. "Tall" sizes have higher back and deeper seat to accommodate taller individuals. Available in Adult and Narrow Adult sizes.

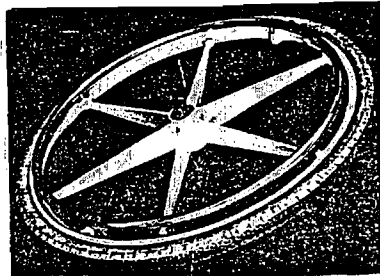
Address: 3233 E. Mission Oaks Blvd.  
Camarillo CA 93010  
213-479-4141

Body Positioner. Installs on fixed or detachable arm wheelchairs. Foam padded. Flame resistant Naugahyde cover. Does not require repositioning after detaching for transfers. Velcro straps.

Sold by: Everest & Jennings (see above)



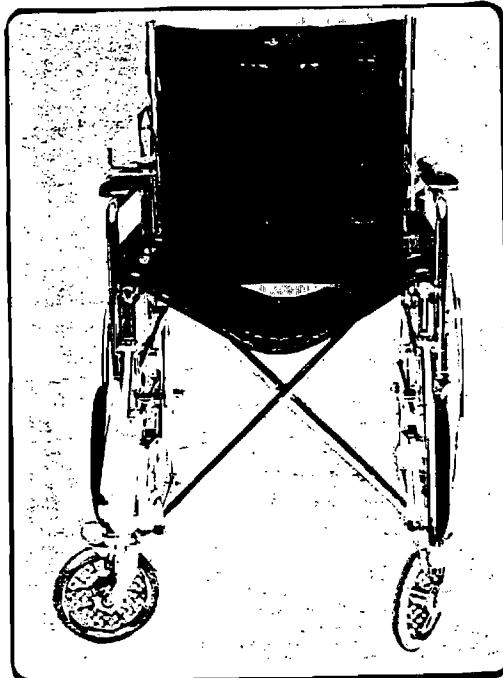
Magnesium Wheel with Pneumatic Tire. Eliminates cleaning/repair of spokes and retrueing. Accepts standard pneumatic tire and inner tube. Smooth or treaded tires.



Sold by: Invacare Corporation  
PO Box 4028  
1200 Taylor St.  
Elyria OH 44036  
216-365-9321

Narro-Matic. Reduces wheelchair width by a maximum of 4". Locks in place. Fits left or right arm. Chrome plated.

Sold by: Modular Medical Corp. (see above)

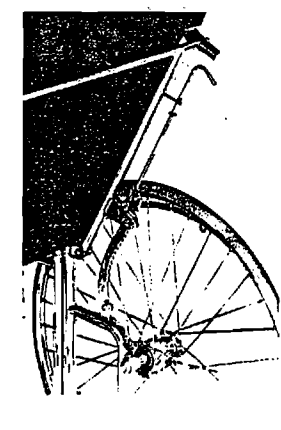


Postura. Seating system. Inclinable seat; abduction wedge to help prevent knee locking; padded side cushions and legrest cradle with elevation adjustment; three-position armrests; lateral and headrest supports.

Sold by: Everest & Jennings (see above)

Reclining Features. 15-position available on 7 models of manufacturer's wheelchair line. Locking wedge and offset wheels and casters. Flared back; extension headrest.

Sold by: Gendron, Inc.  
Lugbill Road  
Archbold OH 43502  
419-445-6060



Sifoam Truck Supports. High and low trunk supports. Lightweight, washable. Also serve as safety belts.

Sold by: Sicimedics, Inc.  
700 N. Valley St. Suite B  
Anaheim CA 92801  
714-991-5340



# WHEELCHAIR PRESCRIPTION FORM

## SEAT WIDTH

### OBJECTIVE

Seat width is the first and most important measurement. The objective is to distribute the person's weight over the widest possible surface, allowing sufficient clearance on each side to facilitate transfers and prevent the individual from rubbing against the side panels; yet keeping the overall width of the wheelchair as narrow as practical to minimize problems with doorways, bathrooms and other entrance ways.

### MEASUREMENT REQ'D:

Across hips or thighs, whichever is wider.

Add 2" (5 cm) to this measurement.

Minimum clearance, 1" each side (2.5 cm)



PATIENT  
MEASUREMENT

WHEELCHAIR  
SEAT WIDTH

### NOTE:

When prescribing a wheelchair for a child, the same measuring considerations apply. If patient will be wearing braces, include the additional width.

## SEAT DEPTH

### OBJECTIVE

To distribute the weight along the buttocks and thighs to minimize undue pressure over the ischium.

Another objective is to prevent circulatory difficulties and skin irritation from occurring in the popliteal areas.

### MEASUREMENT REQ'D:

From behind calf to back of buttocks.

Subtract 2" to 3" (5 cm to 7.5 cm) from this measurement to obtain correct seat depth.



PATIENT  
MEASUREMENT

WHEELCHAIR  
SEAT DEPT

EXAMPLE: Total measurement is 18", less 2" = 16"  
(46 cm, less 5 cm = 41 cm)

## LEG LENGTH

This measurement and the next one, seat height, must be evaluated together.

### OBJECTIVE

To enable adjustment of the footplates, with approximately a 2" (5 cm) clearance above the ground. This will allow thresholds and uneven surfaces to be traversed safely.

To allow proper spacing between thigh and seat in order to avoid pressure areas from developing, or circulatory deficiencies from occurring in this area.

### MEASUREMENT REQ'D:

From the heel of the foot, or shoe, if the individual will be wearing shoes when in the chair, to just under the thigh.



PATIENT  
MEASUREMENT

WHEELCHAIR  
FOOTREST  
MIN.  
MAX.

### NOTE:

All wheelchairs should be ordered some type of seat cushion. The cushion adds comfort and may prevent pressure problems.

## SEAT HEIGHT

### OBJECTIVE

To assist in evenly distributing the person's weight and to prevent pressure areas from developing under the ischium and/or popliteal areas.

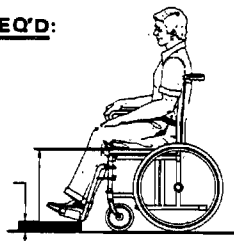
Another objective is to place the individual at proper level to attain optimum propulsion and also to prevent the person's knees from obstructing access to tables and desks.

### MEASUREMENT REQ'D:

From floor to seat platform.

Will patient be using a cushion?

Safe clearance is a minimum of 2" (5 cm).



PATIENT  
MEASUREMENT

WHEELCHAIR  
SEAT HEIGHT

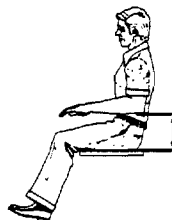
### NOTE:

Be sure to take the next three measurements with patient sitting on the cushion he/she will be using. If a polyurethane foam cushion is used, it will compress to one half its nominal height. Hence, a 4" (10 cm) cushion will compress to approximately 2" (5 cm).

## ARM HEIGHT

### OBJECTIVE

To assist the individual in maintaining correct posture and balance. It also provides the person with comfortable support for the arms and shoulders.



Normal position of arms

Wheelchair arm height, 1" (2.5 cm) higher than patient's measurement.

Will patient be using a cushion?

PATIENT  
MEASUREMENT

WHEELCHAIR  
ARM HEIGHT

### NOTE:

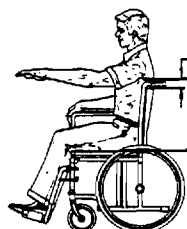
It may be advisable to prescribe adjustable height arms, rather than of custom arms. This will also allow cushion height changes.

## BACK HEIGHT

### OBJECTIVE

The trend today is for back height to be as low as possible. Back height will depend to a large degree on the level of disability.

It should provide the individual with support consistent with his/her physical needs and activity capabilities. Correct back height and back style will help to maintain proper posture and trunkal support.



4" to upholstery (10 cm)

### MEASUREMENT REQ'D:

From seat platform to under extended arm. Will patient be using a cushion? Subtract 4" (10 cm).

PATIENT  
MEASUREMENT

WHEELCHAIR  
BACK HEIGHT

### NOTE:

Full trunk support: Consider a reclining back chair, or a hook-on headrest extension added to a standard upright back. A sectional height back may be advisable in some cases. If the individual's trunk strength changes, the back height can be lowered or raised to fit level of ability.

## FOAM CUSHIONS FOR BACK AND/OR SEAT - CLOTH OR LEATHERETTE COVERED

### BACK CUSHIONS

#### Size

1 x 12 x 16

2 x 12 x 16

1 x 14 x 16

2 x 14 x 16

1 x 16 x 16

2 x 16 x 16

Cloth Leatherette

1 x 16 x 18

2 x 16 x 18

1 x 16 x 22

2 x 16 x 22

1 x 18 x 22

2 x 18 x 22

Cloth Leatherette

1 x 16 x 32

2 x 16 x 32

1 x 18 x 32

2 x 18 x 32

### SEAT CUSHIONS

#### Size

1 x 12 x 12

2 x 12 x 12

1 x 13 x 16

2 x 13 x 16

3 x 13 x 16

4 x 13 x 16

Cloth Leatherette

1 x 16 x 16

2 x 16 x 16

3 x 16 x 16

4 x 16 x 16

1 x 16 x 18

2 x 16 x 18

Cloth Leatherette

3 x 16 x 18

4 x 16 x 18

1 x 18 x 18

2 x 18 x 18

3 x 18 x 18

4 x 18 x 18

Cloth Leatherette

## WHEELCHAIR SELECTION CHART

### Wheelchair Specialists:

- 1) Using either the "Premier," "Universal" or "Traveler" column, review all major component areas of the wheelchair.
- 2) After selecting the correct feature variations, place an "X" in the space provided.
- 3) When all selections have been made, transfer the CODE designator to the chart at the bottom of the page.
- 4) When the chart has been filled in, it will automatically display the correct sequence of alpha-numeric designators used in the Everest & Jennings Wheelchair model numbers. Refer to Price List for Basic Wheelchair Prices.

	Premier Code	Universal Code	Traveler Code		Premier Code	Universal Code	Traveler Code																													
<b>WHEELCHAIR TYPE</b> PREMIER™ model <input checked="" type="checkbox"/> P UNIVERSAL™ model <input type="checkbox"/> U TRAVELER™ model <input type="checkbox"/> T				<b>DRIVE (OTHER THAN STANDARD)</b> One-Arm Drive, Right arm <input type="checkbox"/> 31R One-Arm Drive, Left arm <input type="checkbox"/> 31L Power Drive, 12 volt, Micro-Switch Right hand control <input type="checkbox"/> 34R Left hand control <input type="checkbox"/> 34L Chin control (See Accessories) Power Drive, 24 volt, Proportional Indoor Right hand control <input type="checkbox"/> 3NR Left hand control <input type="checkbox"/> 3NL Power Drive, 24 volt, Proportional Right hand control <input type="checkbox"/> 3PR Left hand control <input type="checkbox"/> 3PL Chin control (See Accessories)																																
<b>SEAT SIZE</b> diameter (12.5 cm) TT, PST, PSP only <input type="checkbox"/> 5 diameter (20.3 cm) <input checked="" type="checkbox"/> 8				<b>BACK (OTHER THAN STANDARD)</b> Sectional-Detachable <input type="checkbox"/> 44 Specify height above seat: 12½" (31.75 cm) _____ 14½" (36.83 cm) _____ 16½" (41.91 cm) _____ 18½" (46.99 cm) _____ 20½" (52.07 cm) _____ Semi-Reclining (30 degree recline) <input type="checkbox"/> 41 Full Reclining (90 degree recline) <input type="checkbox"/> 47 Hinged Back <input type="checkbox"/> 46																																
<b>SEAT SIZE (Basic)</b> <table style="width: 100%; font-size: small;"> <tr> <th></th> <th>Seat Width x Depth Inches</th> <th>Centimeters</th> </tr> <tr> <td>Adult</td> <td>18" x 16"</td> <td>45.72 x 40.64</td> </tr> <tr> <td>Row Adult</td> <td>16" x 16"</td> <td>40.64 x 40.64</td> </tr> <tr> <td>Man Adult</td> <td>14" x 16"</td> <td>35.56 x 40.64</td> </tr> <tr> <td>Senior 16</td> <td>16" x 16"</td> <td>40.64 x 40.64</td> </tr> <tr> <td>Senior 13</td> <td>16" x 13"</td> <td>40.64 x 33.02</td> </tr> <tr> <td>Swing Chair</td> <td>14" x 11½"</td> <td>35.56 x 29.21</td> </tr> <tr> <td>Childs Chair</td> <td>14" x 11½"</td> <td>35.56 x 29.21</td> </tr> <tr> <td>Tiny Tot</td> <td>12" x 11½"</td> <td>30.48 x 29.21</td> </tr> <tr> <td>Pre-School Tot</td> <td>12" x 10"</td> <td>30.48 x 25.40</td> </tr> <tr> <td>Pre-School Pediatric</td> <td>10" x 8"</td> <td>25.40 x 20.32</td> </tr> </table>		Seat Width x Depth Inches	Centimeters	Adult	18" x 16"	45.72 x 40.64	Row Adult	16" x 16"	40.64 x 40.64	Man Adult	14" x 16"	35.56 x 40.64	Senior 16	16" x 16"	40.64 x 40.64	Senior 13	16" x 13"	40.64 x 33.02	Swing Chair	14" x 11½"	35.56 x 29.21	Childs Chair	14" x 11½"	35.56 x 29.21	Tiny Tot	12" x 11½"	30.48 x 29.21	Pre-School Tot	12" x 10"	30.48 x 25.40	Pre-School Pediatric	10" x 8"	25.40 x 20.32	<input checked="" type="checkbox"/> A <input type="checkbox"/> N <input type="checkbox"/> J <input type="checkbox"/> K <input type="checkbox"/> G <input type="checkbox"/> T	<input type="checkbox"/> A <input type="checkbox"/> N <input type="checkbox"/> S <input type="checkbox"/> C <input type="checkbox"/> T <input type="checkbox"/> PST <input type="checkbox"/> PSP	<input type="checkbox"/> A <input type="checkbox"/> N <input type="checkbox"/> T
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<b>DOOR STYLE</b> Open <input type="checkbox"/> A Fold-down <input checked="" type="checkbox"/> U Floor <input type="checkbox"/> T				<b>HEAVY DUTY CONSTRUCTION</b> 14" wide seat (35.56 cm) <input type="checkbox"/> 614 16" wide seat (40.64 cm) <input type="checkbox"/> 616 18" wide seat (45.72 cm) <input type="checkbox"/> 618 (The following require Offset or Detachable Arms) 19" wide seat (48.26 cm) <input type="checkbox"/> 619 20" wide seat (50.80 cm) <input type="checkbox"/> 620 21" wide seat (53.34 cm) <input type="checkbox"/> 621 22" wide seat (55.88 cm) <input type="checkbox"/> 622 23" wide seat (58.42 cm) [Price on ] <input type="checkbox"/> 623 24" wide seat (60.96 cm) [request ] <input type="checkbox"/> 624																																
<b>SPECIAL CONSTRUCTION</b> Active Duty Lightweight <input checked="" type="checkbox"/> LD Active Duty Lightweight (Tall) <input type="checkbox"/> LT Lightweight (Standard) <input type="checkbox"/> LW Wide Seat (17½" high) (44.45 cm) <input type="checkbox"/> SL Wide Seat Lightweight (17½" high) (44.45 cm) <input type="checkbox"/> LL Tiny Tot-Hi seat (20" high) (50.80 cm) <input type="checkbox"/> SH Tiny Tot-Lo seat (17" high) (43.18 cm) <input type="checkbox"/> SL PORTSMAN <input type="checkbox"/> SM PORTSMAN, Lightweight <input type="checkbox"/> LD PORTSMAN <input type="checkbox"/> LC DE SEAT (20" wide) (50.80 cm) <input type="checkbox"/> WS																																				
<b>ARM STYLE</b> Detachable <input type="checkbox"/> 200 Standard <input type="checkbox"/> 210 Arm, no socket <input type="checkbox"/> 230 Offset, full length <input type="checkbox"/> 240 Offset, desk length <input type="checkbox"/> 250 Adjustable, full length <input type="checkbox"/> 260 Adjustable, desk length <input type="checkbox"/> 25A Adjustable, full length <input type="checkbox"/> 26A Lap-Around, full length <input type="checkbox"/> 25W Lap-Around, desk length <input type="checkbox"/> 26W Adjustable, Wrap-Around, full length <input type="checkbox"/> 25C Adjustable, Wrap-Around, desk length <input type="checkbox"/> 26C Portsmann, full length <input type="checkbox"/> 25S Portsmann, desk length <input type="checkbox"/> 26S Portsmann, sloped <input type="checkbox"/> 27S																																				
<b>FRONT RIGGING</b> No Front Rigging — No brackets <input type="checkbox"/> 7XX Tiny Tot (1 piece footrest) <input type="checkbox"/> 7TT Indoor Chair (vertical hanger) <input type="checkbox"/> 72T Footrest with permanent hanger <input type="checkbox"/> 720 Footrest, Swinging-Detachable (Pin) <input type="checkbox"/> 770 Footrest, Swinging-Detachable (Cam) <input checked="" type="checkbox"/> 774 Legrest (Elev), Swinging-Det. (Pin) <input type="checkbox"/> 760 Legrest (Elev), Swinging-Det. (Cam) <input type="checkbox"/> 764 Legrest (Elev), Low Pivot <input type="checkbox"/> 764																																				
<b>CUSTOM MODIFICATIONS — "PREMIER" ONLY</b> Seat Width _____ Arm _____ Back _____ Seat Depth _____ Height _____ Front _____ Seat Height _____ Rigging _____ Min. _____ Max. _____																																				

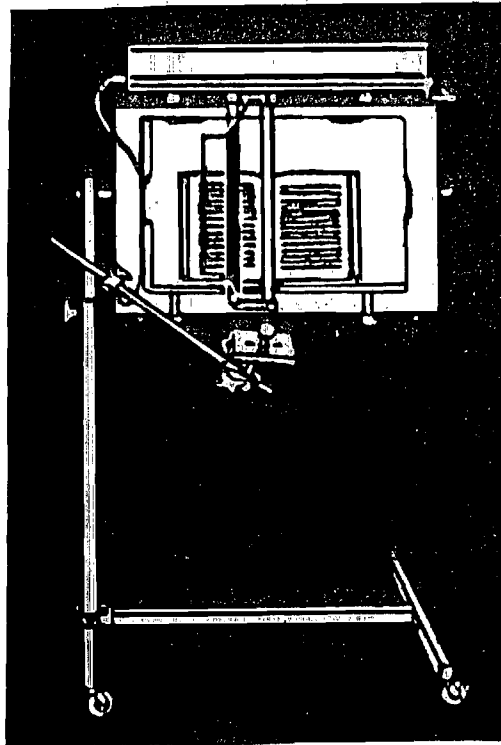
Model Code	Caster Size	Chair Size	Frame Style	Special Const.	Arm Style	Drive Method	Back Style	Heavy Duty	Front Rigging	Basic Wheelchair Price
P										
U										
T										

# WORKSTATIONS

Device Control. For mounting hardware, device-control switches, other aids on wheelchair lap tray. Lockable balljoint clamp used. Appliance top holder can be mounted to either desk top or wheelchair.

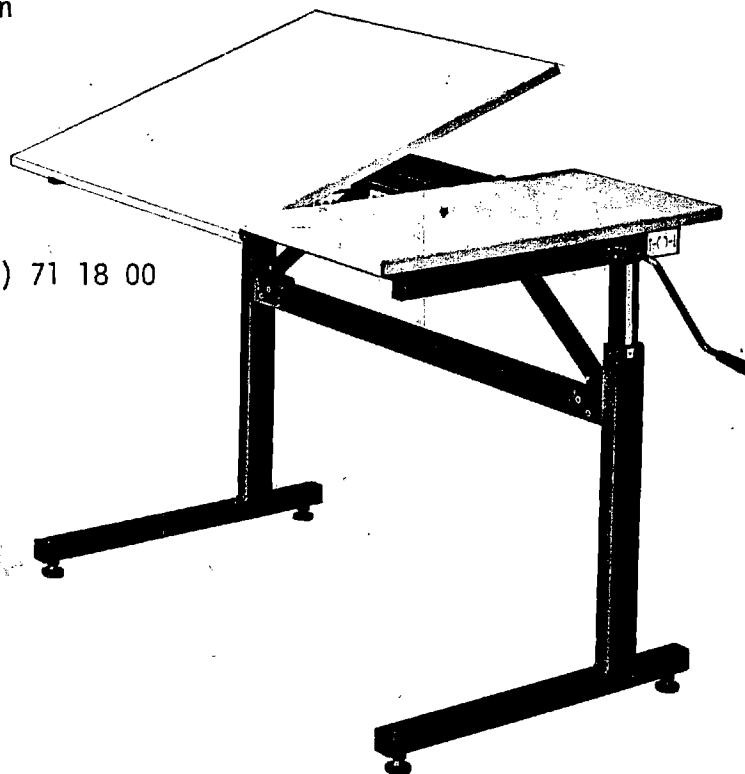
For construction plans, contact:

Northwestern University  
Rehabilitation Engineering Program  
345 East Superior St., Room 1441  
Chicago IL 60611  
312-649-8560



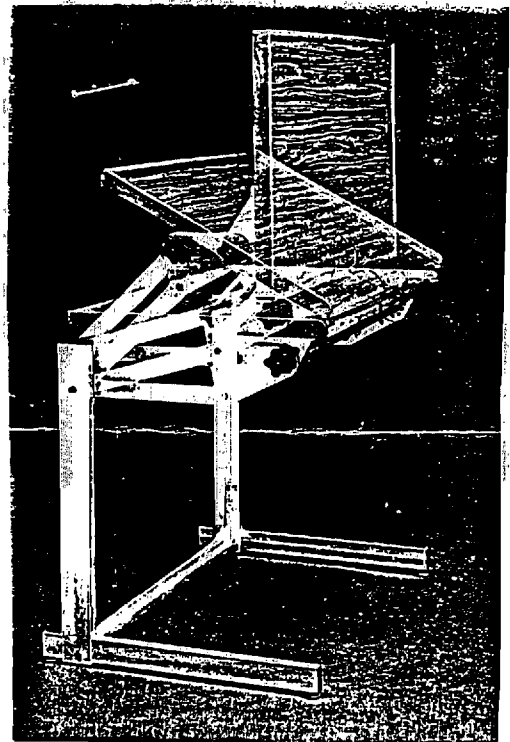
Ergomea Table. Laminated, magnetic oak top. Push-button table control. Blue steel frame. Also available with double-action brake wheels. Can be custom-made.

Order from: Ergomea Danmark  
4683 Rønnede  
Denmark  
Phone: 009 45 (03) 71 18 00



Is-Able Table. Height and tilt adjustable. Laminated wood top. Pencil stop edge and side rims. Steel base.

Sold by: Rol-Fol Table, Inc.  
14876 Raymer St.  
Van Nuys CA 91405  
213-873-2741



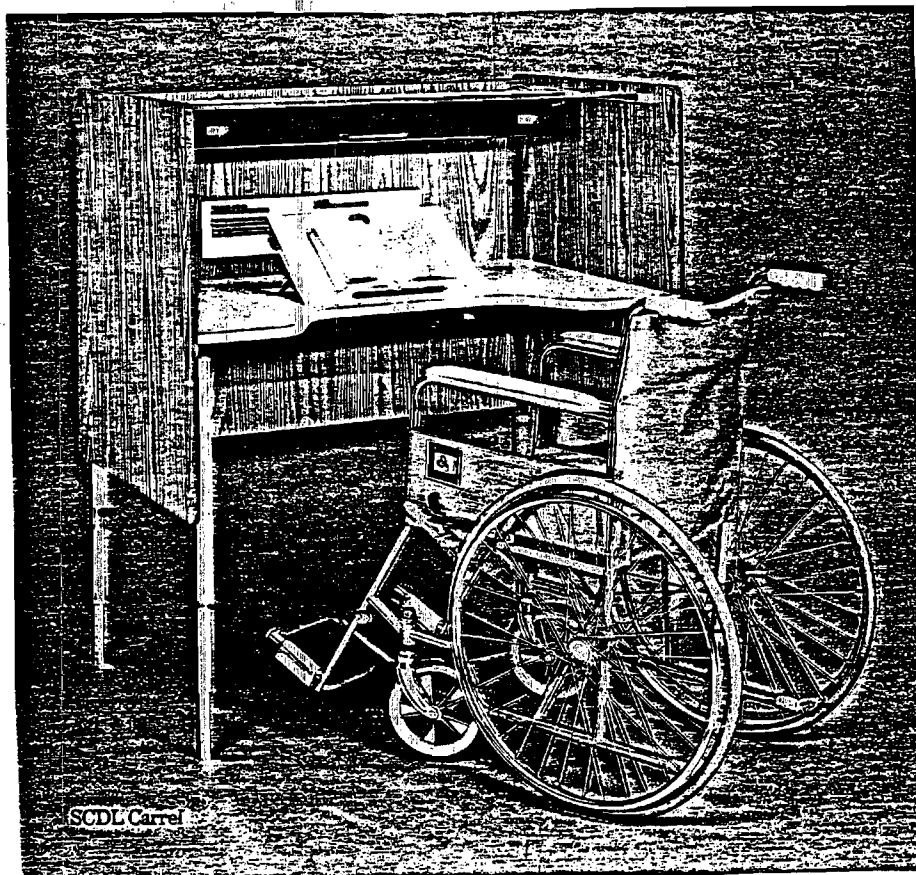
Kard Veyer. Delivers records at work level. No raising or lowering of the work surface.

Sold by: Kardex Systems, Inc.  
Marietta OH 45790  
800-848-9767



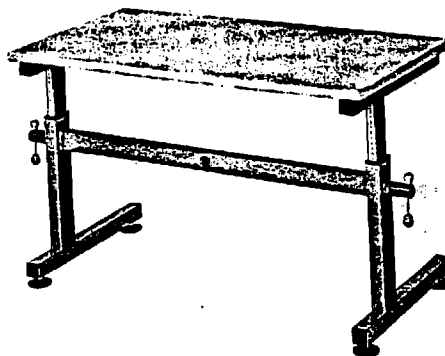
Mar-Line Desks. Carrels; study, project and utility tables; reading stand. Reading stand and carrel have florescent illumination; study table is height adjustable.

Sold by: Mar-Line Displays  
199 Irving Avenue  
Port Chester NY 10973  
914-939-7852



Minigomea Table. Magnetic laminated oak top. Infinite angle adjustment. Blue steel base. Brake wheels optional.

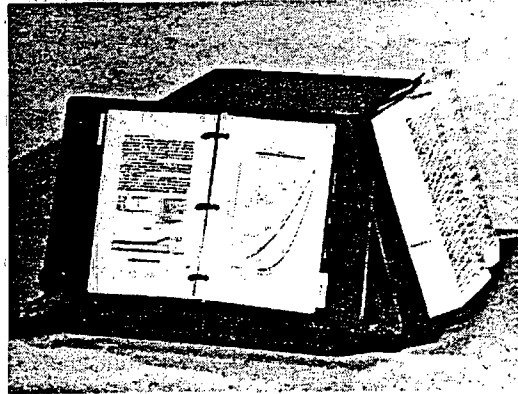
Sold by: Ergomea Danmark  
(see above)



### Quad-Quip Rotary Bookstand.

Mouthstick usable lock.  
Holds books in place; clear  
vinyl straps for pages.  
Wire bookholders can be  
placed on top to hold  
additional materials.  
Walnut stain.

Sold by: Fred Sammons  
Box 32  
Brookfield IL 60513  
800-323-7305



### Sharp Memowriter Mounting Bracket and Assembly. See below.

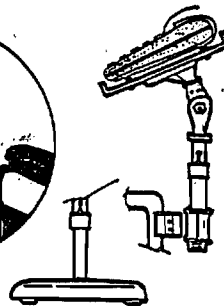
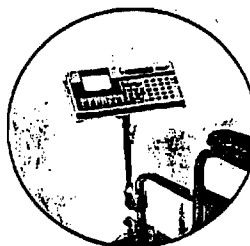
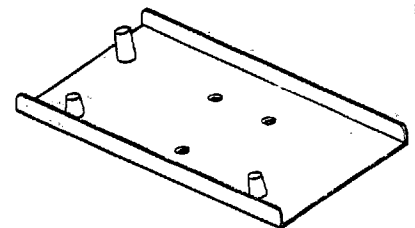
Sold by: Zygo Industries, Inc.  
PO Box 1008  
Portland OR 97207  
503-297-1724

#### \* ZYGO-DESIGNED MOUNTING OPTIONS \*

##### AF-37 MOUNTING BRACKET

In order to preserve the manufacturer's Warranty on the SHARP Memowriter, the bracket was designed to not invade the integrity of the unit.

Three (3) expandable cones slide into the recesses of the Memowriter. Corresponding screws are inserted into the cones and tightened, one at a time, starting with the longest one. Use a small screwdriver and try not to overtighten.



##### AF-37-A MOUNTING ASSEMBLY (Wheelchair)

This assembly is one option for supporting the Memowriter from the front arm of a wheelchair. It contains a pushbutton disconnect fixture\* to enable the unit to be removed for transport, security, or to be used in other mountings.

##### AF-37-B MOUNTING ASSEMBLY (Display Stand)

This is the same basic assembly as in the AF-37-A above, except the clamp is replaced by a 6" diameter weighted base.

**\*IMPORTANT:** The above pre-assembled mountings are offered by popular demand. However, essentially any innovative, flexible mounting scheme can be custom-designed from the parts provided in the ZYGO AF-10-K ADAPTIVE FIXTURES KIT (see CATALOG and PRICE LIST).

Slant Board. Base, birch work surface, non-glare plexiglass surface cover, adjustment arm, and removable pencil edge. Accessories available include: hand/wrist positioning strap, knobs/washers, hand positioning cones.

Sold by: Consumer Care Products, Inc.  
6405 Paradise Lane  
Sheboygan Falls WI 53085  
414-467-2393

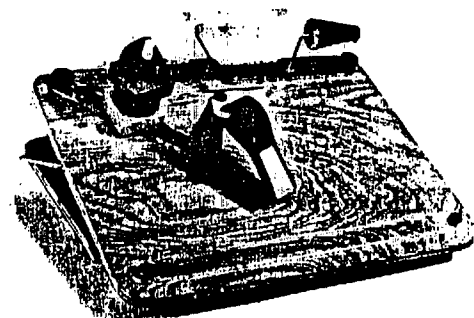
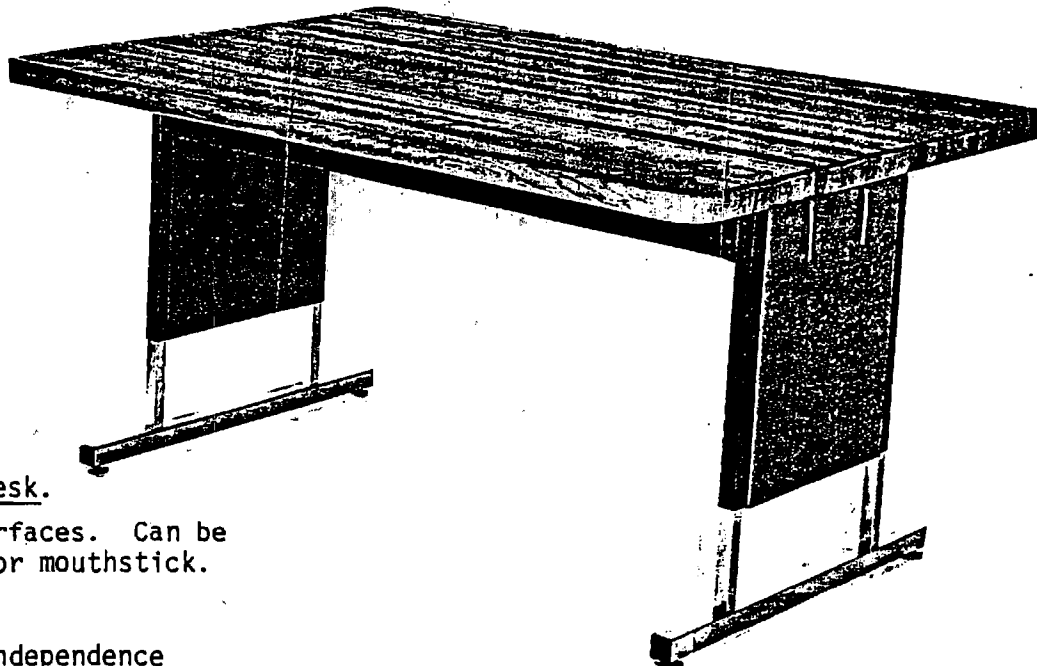


Table. Styles vary: single student table has white leather pattern top; 4-student tables have maple or white leather pattern. Easy-to-grasp height adjustment handle. Burlap side panels.

Sold by: Fleetwood  
Zeeland MI 49464  
616-772-4693



Twin-Turntable Desk.

Two revolving surfaces. Can be moved with hand or mouthstick.

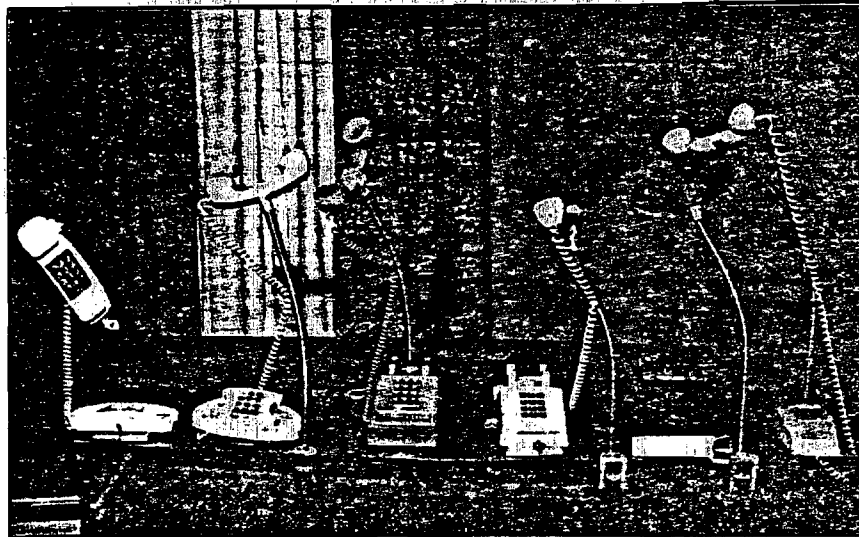
Sold by:

Extensions for Independence  
PO Box 3754  
Downer CA 90242

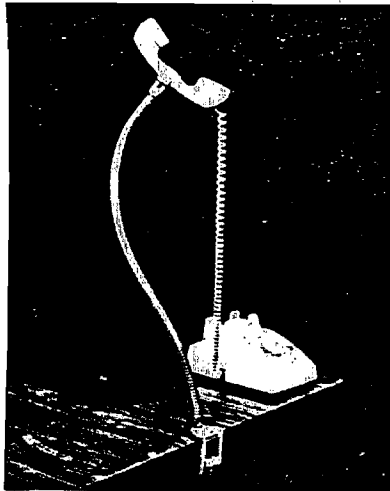


Telephone Arms. Steel and chrome flexible rod. Clamps to desk or table. 20", 25" or 29" lengths.

Sold by: Sparr Telephone Arm Company  
PO Box 143  
Allamuchy NJ 07820



Telephone Extension and Stand. Extension arm is 29"; clamps on. Stand has rubber feet on steel base, handset clamp and line interrupter.



Sold by: Maddack, Inc.  
Penquannock NJ 07440  
201-694-0900

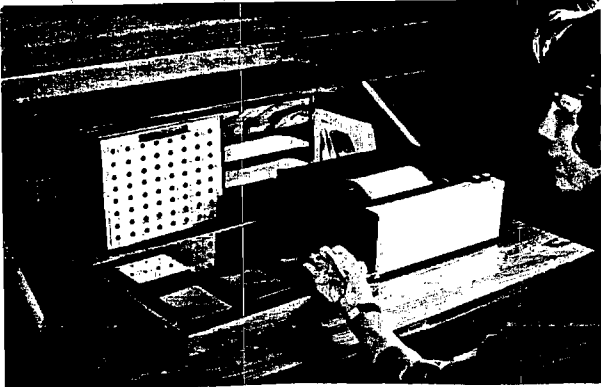




## COMMUNICATIONS

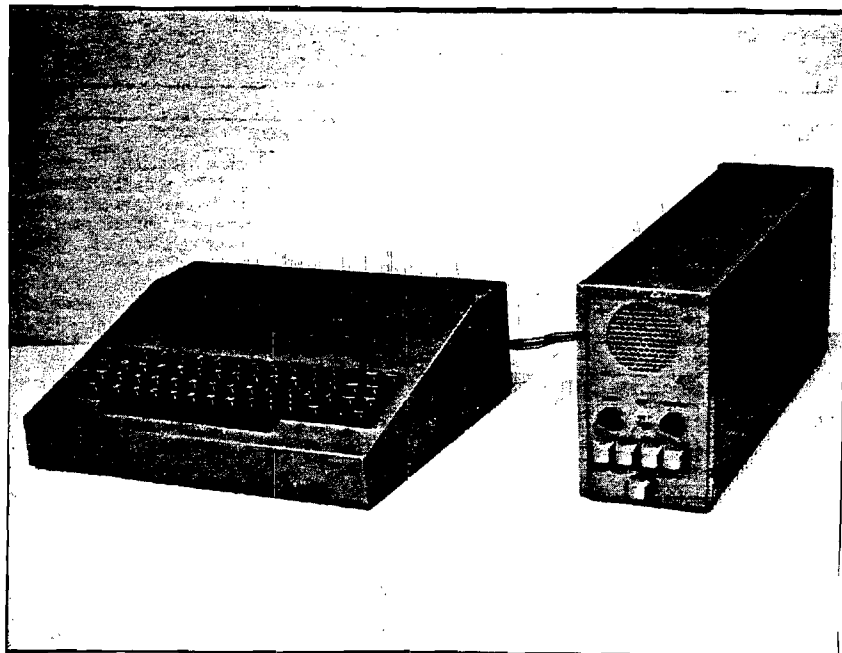
Printing Communicator - Controlled by three touch switches; skin contact only required. Vertical and horizontal sweep touches, then print control. Blank space activated by print switch when light in home location.  
Note: joystick input available.  
Morse code option.

Sold by: R/M Systems, Inc.  
22903 Fern Avenue  
Torrance CA 90505  
Phone 213-530-5146



Synthetic Speech Device - Accepts material in serial ASCII RS232 interface.

Sold by: J.C. Swail  
National Research Council M-50  
Dee R182 Montreal Road  
Ottawa Ontario, Canada KIA 0R8

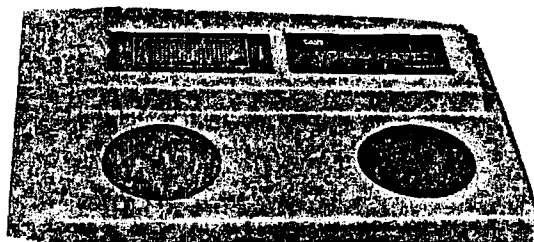


Talking Pictures - 110 cards, one side pictures of, for example, shoes, water, bathroom, and the other side words, in English and Spanish, German, French, Italian. Heavy-duty vinyl envelopes hold 20 commonly-used cards. Stickers kit and board kit also available.

Sold by: Trace Research and Development Center  
314 Waisman Center  
1500 Highland Avenue  
Madison WI 53706  
608-262-6966

Voice Mate - Answers "yes" or "no" in a child's voice. Volume control; uses 9-V battery.

Sold by: TASH, Inc.  
c/o Sunnybrook Medical Centre  
2075 Bayview Avenue  
Toronto Ontario M4N 3M5  
416-486-3569

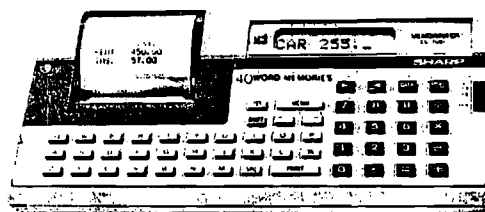


Zygo Sharp Memowriter - Typewriter keyboard; print or non-print options. Automatic power off; 600 character memory. Uses Ni-Cad battery; AC adapter. Calculator functions.

Sold by: Zygo Industries, Inc.  
PO Box 1008  
Portland OR 97207  
503-297-1724

IMAGINE A FULL  
TYPEWRITER KEY-  
BOARD; A 10  
CHARACTER  
LIQUID CRYSTAL  
DISPLAY; A 16  
CHARACTER  
PRINTER;  
AND 40 SEPARATE  
SELF-PROGRAM-  
MABLE MEMORIES

LIKE:  
MY NAME IS LARRY  
WEISS  
WHAT'S YOUR NAME  
?



## SIGNALS

Apnea/Respiration Monitor - Under mattress pad sensor/ flashing light.  
Detects changes in respiratory movement.  
Also auditory alarm. Requires no wires,  
chest bands or gels. Lamps have 1,000,000-  
hour life expectancy.

Sold by: Electronic Monitors, Inc.  
PO Box 1087  
Eules TX 76039  
817-283-0859



## TELEPHONE AIDS

Telenote - Attaches to telephones; enable user to send and receive written information. Simultaneous oral communication is possible. UL listed.



Sold by: TALOS Systems, Inc.  
7419 East Helm Drive  
Scottsdale AZ 85260  
phone 602-948-6540

### Telephone Machine -

Transmits sounds through the vibrations of bones in the head. For persons who have difficulty in speaking.

For information, contact:

Japan Sun Info Center  
4.2.23 Shinjuku-ku  
Tokyo Japan

Teletym - TTY with hard copy roll printer; built-in coupler without acoustical cups; automatic answering; keyboard dialing; built-in ring detector with buzz option also; and re-dial features.

Sold by: Micon Industries  
252 Oak Street  
Oakland CA 94607  
415-763-6033

